

**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maidi Substation.

**Transnet Freight Rail**an Operating Division **TRANSNET SOC LTD**

[Registration Number 1990/000900/30]

**REQUEST FOR PROPOSAL (RFP)****FOR THE SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 3KV DC TRACTION SUBSTATION EQUIPMENT AT STRYDER AND MAIDI SUBSTATION**

<b>RFP NUMBER</b>	<b>: CRAC_ELF_45981</b>
<b>ISSUE DATE</b>	<b>: 14 May 2024</b>
<b>COMPULSORY BRIEFING</b>	<b>: 22 May 2024</b>
<b>CLOSING DATE</b>	<b>: 31 May 2024</b>
<b>CLOSING TIME</b>	<b>: 12h00pm</b>
<b>TENDER VALIDITY PERIOD</b>	<b>: 12 weeks from closing date</b>

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Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

## 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>Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.</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>COMPULSORY TENDER CLARIFICATION MEETING</b>	<p>A Compulsory Tender Clarification Meeting will be conducted at Klerksdorp Transnet Freight Rail Depot (-26.870342 26.669356) <b>on the 22 May 2024 at 10:00pm [10 O'clock]</b> for a period of ± 2 (two) hours. [Tenderers to provide own transportation and accommodation].</p> <p>The Compulsory Tender Clarification Meeting will start punctually, and information will not be repeated for the benefit of Tenderers arriving late.</p> <p><b>NB: After the briefing we will then proceed to the sites:</b></p> <p>Maldi Substation: (North West province): -27.71848253 25.3821</p> <p>Stryders Substation: (North West province): -27.5839071 25.66374</p> <p>Certificate of Attendance in the form set out in the <b>Returnable Schedule T2.2-1</b> hereto must be completed and submitted with your Tender as proof of attendance is required for a <b>compulsory</b> site meeting and/or tender briefing.</p> <p><b>Tenderers are required to bring this Returnable Schedule T2.2-1 to the Compulsory Tender Clarification Meeting to be signed by the Employer's Representative.</b></p> <p><b>Tenderers failing to attend the compulsory tender briefing will be disqualified.</b></p>
<b>CLOSING DATE</b>	<p><b>12:00pm on the 31 May 2024</b></p> <p>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></p>

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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.

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### **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).

**TRANSNET FREIGHT RAIL**

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- 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 [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</b> <b>(Reg No. 1990/000900/30)</b>
C.1.2	The tender documents issued by the <i>Employer</i> comprise:  <b>Part T: The Tender</b>  Part T1: Tendering procedures Part T2: Returnable documents  <b>Part C: The contract</b>  Part C1: Agreements and contract data Part C2: Pricing data
	T1.1 Tender notice and invitation to tender T1.2 Tender data  T2.1 List of returnable documents T2.2 Returnable schedules  C1.1 Form of offer and acceptance C1.2 Contract data (Part 1 & 2) C1.3 Form of Securities  C2.1 Pricing instructions C2.2 Bill of Quantities

	Part C3: Scope of work	C3.1 Works Information
	Part C4: Site information	C4.1 Site information
C.1.4	The Employer's agent is:	Procurement Officer
	Name:	Nnemo Pyana
	Address:	15 Girton Road Inyanda House 2 Park Town Johannesburg 2001
	Tel No.	011 308 1682
	E – mail	Nnemo.pyana@transnet.net
C.2.1	Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:	
	<p><b>1. Stage One - Eligibility with regards to attendance at the compulsory clarification meeting:</b></p> <p>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</p>	
	<p><b>2. Stage Two - Eligibility in terms of the Construction Industry Development Board:</b></p> <p>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 <b>7EP or higher</b> class of construction work, are eligible to have their tenders evaluated.</p> <p>b) Joint Venture (JV)</p> <p>Joint ventures are eligible to submit tenders subject to the following:</p> <ol style="list-style-type: none"> <li>1. every member of the joint venture is registered with the CIDB.</li> <li>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</li> <li>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 7EP or higher class of construction work or a value determined in</li> </ol>	

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 Four - 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 score for functionality is **70** 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 functionality threshold will be regarded as an unacceptable tender.***

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C.2.7 The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender. **Tenderers must complete and sign the attendance register.** Addenda will be issued to and tenders will only be received from those tendering entities including those entities that intends forming a joint venture appearing on the attendance register.

Tenderers are also **required to bring their RFP document to the briefing session and have their returnable document T2.2-1 certificate of attendance** signed off by the Employer's authorised representative.

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C.2.12 No alternative tender offers will be considered.

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C.2.13.3 Each tender offer shall be in the **English Language.**

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C.2.13.5 The *Employer's* details and identification details that are to be shown on each tender offer are as follows:

Identification details:

The tender documents must be uploaded with:

- Name of Tenderer: **(insert company name)**
- Contact person and details: **(insert details)**
- The Tender Number: CRAC\_ELF\_45981

The Tender Description: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

Documents must be marked for the attention of:

***Employer's Agent: Nnemo Pyana***

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C.2.13.9 Telephonic, telegraphic, facsimile or e-mailed tender offers will not be accepted.

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C.2.15 The closing time for submission of tender offers is:  
Time: **12:00pm** on the **31 May 2024**  
Location: The Transnet e-Tender Submission Portal:  
(<https://transnetetenders.azurewebsites.net>);

**NO LATE TENDERS WILL BE ACCEPTED**

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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.

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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 case of all EMEs and QSEs with 51% black ownership or more together with the tender;
3. A valid CIDB CRS number to confirm the correct and required 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

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C3.11 The minimum number of evaluation points for functionality is: **70**

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.**

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**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
<p><b>PREVIOUS WORKING EXPERIENCE (CERTIFICATES OF COMPLETION)</b></p> <p>Bidders should provide similar work done previously related to 3kV DC traction Substation, including cabling work, indoor DC equipment's and have contactable references.</p>	<p><b>No Response (score 0):</b> Tenderer has submitted no information <b>(score 10):</b> 1 Working experience with completion letter and contactable references irrelevant to this RFQ. <b>(score 20):</b> 2 Working experience with completion letters and contactable references relevant to this RFQ. <b>(score 30):</b> 3 Working experience with completion letters and contactable references relevant to this RFQ. <b>(score 40):</b> 4 Working experience with completion letters and contactable references relevant to this RFQ <b>(score 50)</b> &gt;5 Working experience with completion letters and contactable references relevant to this RFQ</p>	<p>0=0%</p> <p>10=20%</p> <p>20=40%</p> <p>30=60%</p> <p>40=80%</p> <p>50=100%</p>	<p><b>50</b></p>
<p><b>RESOURCES TO SUCCESSFULLY THE PROJECT</b></p> <p>The contractor must prove that he/she has the resources to successfully complete the project qualified personnel,</p>	<p><b>No Response (score 0):</b> Tenderer has submitted no information.</p> <p><b>(score 4):</b> Key staff has limited recommended levels of relevant experience and qualifications. Key staff has 1 to 3 years' experience. Inadequate indication of roles and responsibilities and specific function of each team member on the organogram.</p>	<p>0 =0%</p> <p>4= 20%</p>	<p><b>20</b></p>



	<p><b>(score 8):</b> Key staff has acceptable levels of relevant experience and qualifications. Key staff has more than 3 years but up to 5 years' experience. Organisation chart showing reasonable indication of roles and responsibilities and specific function of each team member..</p> <p><b>(score 12):</b> Key staff have acceptable levels of relevant experience and qualifications. Keys staff has more than 5 years but up to 7 years' experience. Organisation chart showing adequate indication of roles and responsibilities and specific function of each team member.</p> <p><b>(score 16):</b> All Key staff have acceptable levels of relevant experience and qualifications with more than 7 years' experience. Organisation chart showing more than adequate indication of roles and responsibilities and specific function of each team member.</p> <p><b>(score 20):</b> All Key staff have acceptable levels of relevant experience and qualifications with more than 7 years' experience. Organisation chart showing more than adequate indication of roles and responsibilities and specific function of each team member.</p>	<p>8=40%</p> <p>12=60%</p> <p>16=80%</p> <p>20=100%</p>	
<p><b>WORK PROGRAM / DELIVERY PERIOD</b></p>	<p><b>No Response (score 0):</b> The tenderer did not submit the program</p>	<p>0=0%</p>	



Gantt chart explaining step by step how work is going to be executed and commissioned	<b>(score 2):</b> >8 months to complete the project	2=20%	<b>30</b>
	<b>(score 4):</b> >6 months to complete the project	4=40%	
	<b>(score 6):</b> <4 months to complete the project With detailed Gantt chart	6=60%	
	<b>Very Good (score 8):</b> < 3 months to complete the project With detailed Gantt chart	8=80%	
	<b>(score 10)</b> < 2 months to complete the project With detailed Gantt chart	10=100%	
<b>Maximum possible score for Functionality</b>			<b>70/100</b>

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

- T2.2-3 Previous Experience
- T2.2-4 Project Organogram, Management & CVs of Key Persons
- T2.2-5 Programme.

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.3.11. 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 Preferential Procurement Regulations.

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,

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 BBEE rating not be provided, tenderers with no verification will score zero points for preferencing.**

Thresholds	Minimum Threshold
Technical / functionality	70

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 (20)
B-BBEE Level of contributor Level 1 or 2	8
At least 51% Black Owned	2
Local Content and Production: <ul style="list-style-type: none"> <li>• Electrical and Telecoms Cables (90% designated threshold)</li> <li>• Steel product and component for construction (100% designated threshold)</li> <li>• Industrial Lead Batteries (50% designated threshold)</li> <li>• Transformer Oil (100% designated threshold)</li> </ul> Manufacture of Bushing (90% designated threshold)	5
30% Black Women Owned Entities	2

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Job Creation	3
Non-Compliant and/or B-BBEE Level 3-8 contributors	0

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

<b>Specific Goals</b>	<b>Acceptable Evidence</b>
B-BBEE	B-BBEE Certificate / Sworn-Affidavit B-BBEE Certificate (in case of JV, a consolidate scorecard will be accept) as per DTIC guidelines
Entities that are at least 51 % Black Owned	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	Certified copy of ID Documents of the Owners and B-BBEE Certificate / Affidavit (in case of JV, a consolidate scorecard will be accept
Creation of new jobs and labour intensification	Returnable section/annexure T2.2-14 on job creation.
Local Content and Local Production	Returnable Local Content and production Annexures Local Content Annexures B, C, D and E for ALL sectors

The maximum points for this bid are allocated as follows:

<b>DISCRIPTION</b>	<b>POINTS</b>
PRICE	80
<b>B-BBEE STATUS LEVEL OF CONTRIBUTION Level 1 or 2</b>	<b>8</b>
<b>Entities that are at least 51 % Black Owned</b>	<b>2</b>
<b>30% Black Women Owned Entities</b>	<b>2</b>
<b>Job Creation</b>	<b>3</b>
<b>Local Content and Production:</b>	<b>5</b>
•Electrical and Telecoms Cables (90% designated threshold)	
•Steel product and component for construction (100% designated threshold)	
•Industrial Lead Batteries (50% designated threshold)	
•Transformer Oil (100% designated threshold)	
•Manufacture of Bushing (90% designated threshold)	
Non-Compliant and/or B-BBEE Level 3-8 contributors	0
Total points for Price and Specific Goals must not exceed	100

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**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.

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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) 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,
- c) has the legal capacity to enter into the contract,
- d) 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

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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,

e) complies with the legal requirements, if any, stated in the tender data and

f) 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:

- T2.2-1 **Stage One as per CIDB: Eligibility Criteria Schedule** - - Certificate of attendance at Compulsory Tender Clarification Meeting

### 2.1.2 Stage Three as per CIDB: these schedules will be utilised for evaluation purposes:

- T2.2-2 **Evaluation Schedule:** Previous experience
- T2.2-3 **Evaluation Schedule:** Project Organogram, Management & CV's of Key Personnel
- T2.2-4 **Evaluation Schedule :** Programme

### 2.1.3 Returnable Schedules:

#### General:

- T2.2-5 Authority to submit tender.
- T2.2-6 Record of addenda to tender documents.
- T2.2-7 Letter of Good Standing
- T2.2-8 Risk Elements
- T2.2-9 Availability of equipment and other resources
- T2.2-10 Schedule of proposed Subcontractors (if subcontract in terms of TPPP is not eligibility)
- T2.2-11 Site Establishment requirements
- T2.2-12 Valid proof of Respondent's compliance to Specific Goals evidence (Preference Claim Form) requirements stipulated in SBD6.1.: CIDB SFU ANNEX G Compulsory Enterprise Questionnaire
- T2.2-13 Job Creation
- T2.2-14 Local Content and Production

### 2.1.4 Agreement and Commitment by Tenderer:

- 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



**2.1.5 Bonds/Guarantees/Financial/Insurance:**

- T2.2-21 Insurance provided by the Contractor.
- T2.2-22 Form of Intent to provide a Performance Guarantee
- T2.2-23 Three (3) years audited financial statements.

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

**2.3 C1.2 Contract Data (Data by the Contractor)**

**2.4 C2.2 Bill of Quantities**

**TRANSNET FREIGHT RAIL**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maidi Substation.

---

**T2.2-1: 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 compulsory tender clarification meeting

Held at:	.....	
On (date)	.....	Starting time: .....

**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

.....

## T2.2-2: 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 works as detailed in the Works Information with reference to:
  - Electrical works
- 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	

Score	Previous Experience
0	<b>No Response (score 0):</b> Tenderer has submitted no information
20	<b>(score 10):</b> 1 Working experience with completion letter and contactable references irrelevant to this RFQ.
40	<b>(score 20):</b> 2 Working experience with completion letters and contactable references relevant to this RFQ.
60	<b>(score 30):</b> 3 Working experience with completion letters and contactable references relevant to this RFQ.
80	<b>(score 40):</b> 4 Working experience with completion letters and contactable references relevant to this RFQ
100	<b>(score 50)</b> >5 Working experience with completion letters and contactable references relevant to this RFQ

**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

**T2.2-3: Evaluation Schedule - Qualifications & CV’s of Key Personnel**

The tender must be able to demonstrate that the project personnel have sufficient knowledge, experience and qualifications to provide the required services and submit the following documents as a minimum with the tender:

1. The experience of assigned key persons in relation to the scope of work will be evaluated from three different points of view, namely:
  - i. Relevant experience - total number of moored vessel response and vessel manoeuvring studies involved in and knowledge of issues pertinent to the project e.g. local conditions, affected communities, legislation, techniques etc.
  - ii. The education, training and skills of the assigned staff in the specific sector, field, subject, etc. which is directly linked to the Scope of Works. Proof of education and training must be attached to the C.V.
2. Comprehensive CV’s should be attached to this schedule:

As a minimum each CV should address the following, but not limited to;

- i. Personal particulars
  - a. Name
  - b. Place (s) of tertiary education and dates associated therewith
  - c. Professional awards
- ii. Qualifications (degrees, diplomas, grades of membership of professional societies and professional registrations)
- iii. Name of current employer and position in enterprise
- iv. Overview of post graduate experience (year, organization and position)
- v. Outline of recent assignments / experience that has a bearing on the Scope of Works

List of Key Persons assigned to the above disciplines

No.	Key Persons	Name and Surname	CV attached (Yes/No)
1			
2			
3			
4			
5			
6			

**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maidi Substation.

The scoring of the Management & CV's of Key Persons will be as follows:

<b>Score 0</b>	Failed to provide information No response.
<b>Score 20</b>	Key staff has limited recommended levels of relevant experience and qualifications. Key staff has 1 to 3 years' experience. Inadequate indication of roles and responsibilities and specific function of each team member on the organogram.
<b>Score 40</b>	Key staff has acceptable levels of relevant experience and qualifications. Key staff has more than 3 years but up to 5 years' experience. Organisation chart showing reasonable indication of roles and responsibilities and specific function of each team member..
<b>Score 60</b>	Key staff have acceptable levels of relevant experience and qualifications. Keys staff has more than 5 years but up to 7 years' experience. Organisation chart showing adequate indication of roles and responsibilities and specific function of each team member.
<b>Score 80</b>	All Key staff have acceptable levels of relevant experience and qualifications with more than 7 years' experience. Organisation chart showing more than adequate indication of roles and responsibilities and specific function of each team member
<b>Score 100</b>	All Key staff have acceptable levels of relevant experience and qualifications with more than 7 years' experience. Organisation chart showing more than adequate indication of roles and responsibilities and specific function of each team member.

**Index of documentation attached to this schedule:**

.....

.....

.....

.....

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

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## **T2.2-4: Evaluation Schedule: Programme**

### **Note to tenderers:**

#### Programme

**The Tenderer details the programme for evaluation and attaches it to this schedule. In addition, the Tenderer is to provide an electronic copy of the programme in Primavera or any other compatible software.**

The Tenderer's attention is drawn to core clause 31 of the NEC3 Engineering and Construction contract regarding the items to be shown on a programme.

The tenderer shall provide the proposed programme, at a minimum **Level 2** showing the following:

- Ability to execute the works in terms of the *Employer's* requirements and within the required timeframe indicating, in a logical sequence, the order and timing of the construction that will take place in order to Provide the Works clearly indicating the capacity & capability to achieve the dates stated in the Contract Data.
- Dates when the *Contractor* will need access to any part of the Site; submission & approval process & timing for Health & Safety Files, Environmental Files and Quality Files. In addition the Programme must clearly demonstrate the procurement process for all long lead items if applicable.
- The *Contractor* indicates how he plans in achieving the following dates and clearly demonstrates them on the schedule - Start Date, Access Date, Planned Completion & Completion Date. In addition, the Programme clearly demonstrates adequate provisions for Time Risk Allowance (TRA). Time Risk Allowances are not float, are owned by the Tenderer, can be included in the activity duration and illustrated in the schedule in a code field or as an attachment.
- The Programme must clearly support and demonstrate alignment to the Method Statement as contained in T2.1 List of Returnables.

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

The scoring of the Programme will be as follows:

<b>Score 0</b>	<b>No Response (score 0):</b> The tenderer did not submit the program
<b>Score 20</b>	<b>(score 2):</b> >8 months to complete the project
<b>Score 40</b>	<b>(score 4):</b> >6 months to complete the project
<b>Score 60</b>	<b>(score 6):</b> <4 months to complete the project With detailed Gantt chart
<b>Score 80</b>	<b>Very Good (score 8):</b> < 3 months to complete the project With detailed Gantt chart
<b>Score 100</b>	<b>(score 10)</b> < 2 months to complete the project With detailed Gantt chart

Attachment A: Hard Copy of Programme

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maidi Substation.

## **T2.2-5: 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



Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maidi Substation.

**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.

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

**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.

Name of firm	Address	Authorising signature, name (in caps) and capacity

**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

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

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## **T2.2-6: 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		

Attach additional pages if more space is required.

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maidi Substation.

---

## **T2.2-7: Letter/s of Good Standing with the Workmen's Compensation Fund**

Attached to this schedule is the Letter/s of Good Standing.

- 1.
- 2.
- 3.
- 4.

Name of Company/Members of Joint Venture:

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







Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

## T2.2-10: Schedule of Proposed Subcontractors

The tenderer is required to provide details of all the sub-contractors that will be utilised in the execution of the *works*.

**Tenderer to note that after award, any deviations from this list of proposed sub-contractors will be subject to acceptance by the *Project Manager* in terms of the *Conditions of Contract*.**

Provide information of the Sub-contractors below:

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships	Military Veterans	
	<input type="checkbox"/>	<input type="checkbox"/>						

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships	Military Veterans	
	<input type="checkbox"/>	<input type="checkbox"/>						

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships	Military Veterans	
	<input type="checkbox"/>	<input type="checkbox"/>						

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships	Military Veterans	
	<input type="checkbox"/>	<input type="checkbox"/>						





**T2.2-12: 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
- 1.2 The value of this bid is estimated to not exceed 50 000 000 (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:

	<b>POINTS</b>
<b>PRICE</b>	<b>80</b>
<b>B-BBEE STATUS LEVEL OF CONTRIBUTION Level 1 or 2</b>	<b>8</b>
<b>Entities that are at least 51 % Black Owned</b>	<b>2</b>
<b>30% Black Women Owned Entities</b>	<b>2</b>
<b>Job Creation</b>	<b>3</b>
<b>Local Content and Production:</b>	<b>5</b>
•Electrical and Telecoms Cables (90% designated threshold)	
•Steel product and component for construction (100% designated threshold)	
•Industrial Lead Batteries (50% designated threshold)	
•Transformer Oil (100% designated threshold)	
•Manufacture of Bushing (90% designated threshold)	
Non-Compliant and/or B-BBEE Level 3-8 contributors	<b>0</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

$$P_s = 80 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

- Ps = Points scored for comparative price of bid under consideration
- Pt = Comparative price of bid under consideration
- Pmin = 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 Level 1 or 2	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 / CIPC B-BBEE Certificate (in case of JV, a consolidate scorecard will be accept) as per DTIC guidelines
51% Black 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)
Creation of new jobs and labour intensification	Returnable section/annexure T2.2-14 on job creation.
Local Content and Local Production	Returnable Local Content and production Annexures Local Content Annexures B, C, D and E for ALL sectors

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



<b>Enterprise</b>	<b>B-BBEE Certificate &amp; Sworn Affidavit</b>
<b>Large</b>	Certificate issued by SANAS accredited verification agency
<b>QSE</b>	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> .]
<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

- 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**



- 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 Supplier/Service provider
  - Other Suppliers/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>
---

### **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

<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.



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, (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

<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.

- 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.

Signature	Date
Position	Name of bidder

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

## **T2.2-13: JOB-CREATION SCHEDULE**

The Government has identified State Owned Enterprises sourcing activities as a key enabler to achieve the National Development Plan (NDP) objective of reducing unemployment from the current baseline of 28% to 6%.

In order to give effect to these job creation objectives, Tenderers are required to provide the following undertaking of new jobs that will be created (either by them or by their subcontractors) should they be awarded this tender.

**Tenderers to note, that if successful, any deviations from the Job creation Schedule in the contract phase will be subject to acceptance by the *Project Manager* in terms of the Conditions of Contract. Please also note the applicable Z clauses in Contract Data by Employer.**

- (a) Please indicate total number of new jobs that will be created over the term of the contract:

Total number and value of new jobs created	Total number of new jobs	Total rand value of new jobs created

- (b) Of the total number of new jobs created, please indicate the number and value of new jobs to be created for the following designated groups:

	Total number of new jobs	Total rand value of new jobs
Black men		
Black women		
Black Youth		
Black people living in rural or underdeveloped areas or townships		
Black People with Disabilities		

- (c) Of the total number of new jobs created, please indicate the number of skilled, semi-skilled and unskilled new jobs that will be created over the term of the contract:

	Total number of Skilled jobs	Total number of Semi-skilled jobs	Total number of Unskilled jobs
Black men			
Black women			
Black Youth			
Black people living in rural or underdeveloped areas or townships			

**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

Black People with Disabilities			
Other			

(d) Please indicate the number of new jobs to be created, broken down per quarter over the term of the contract.

<b>Year 1</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
Total number of new jobs				
Number of new jobs for Black men				
Number of new jobs for black women				
Number of new jobs for black youth				
Number of new jobs for black people living in rural or underdeveloped areas or townships				
Number of new jobs for black People with Disabilities				
Number of new jobs for other categories				
Number of new skilled jobs				
Number of new semi-skilled jobs				
Number of new unskilled jobs				

**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maida Substation.

**T2.2-14: LOCAL CONTENT DECLARATION DOCUMENT**

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2017 and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].

1. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2017 as follows:

$$LC = [1 - x / y] * 100$$

Where

- x is the imported content in Rand
- y is the bid price in Rand excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) at 12:00 on the date of advertisement of the bid as indicated in paragraph 4.1 below.

**The SABS approved technical specification number SATS 1286:2017 is accessible on <http://www.thedtic.gov.za/sectors-and-services-2/industrial-development/industrial-procurement/> at no cost.**

2. **The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid is/are as follows:**

Item No.	Description of services, works or goods	Stipulated minimum threshold
1	Electrical and Telecomms Cables 90%	90%
2	Steel Products and components for construction 100%	100%
3	Wire products 100%	100%
4	Batteries 50%	50%
5	Transformer Oil 100%	100%
6	Manufacture of Bushing 90%	90%

3. Does any portion of the goods or services offered have any imported content?

*(Tick applicable box)*

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maida Substation.

- 3.1 If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by SARB for the specific currency at 12:00 on the date of advertisement of the bid.

The relevant rates of exchange information is accessible on [www.reservebank.co.za](http://www.reservebank.co.za)

Indicate the rate(s) of exchange against the appropriate currency in the table below (refer to Annex A of SATS 1286:2011):

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

NB: Bidders must submit proof of the SARB rate (s) of exchange used.

- 4. Where, after the award of a bid, challenges are experienced in meeting the stipulated minimum threshold for local content the dtic must be informed accordingly in order for the dti to verify and in consultation with the AO/AA provide directives in this regard.

**LOCAL CONTENT DECLARATION**  
**(REFER TO ANNEX B OF SATS 1286:2011)**

**LOCAL CONTENT DECLARATION BY CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY (CLOSE CORPORATION, PARTNERSHIP OR INDIVIDUAL)**

**IN RESPECT OF BID NO. ....**

**ISSUED BY:** (Procurement Authority / Name of Institution):

.....  
NB

- 1 The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.
- 2 Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on <http://www.thedtic.gov.za/sectors-and-services-2/industrial-development/industrial-procurement/> Bidders should first complete Declaration D. After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C. **Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph (c) below.** Declarations D and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

I, the undersigned, ..... (full names),

**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

do hereby declare, in my capacity as .....  
of .....(name of bidder entity), the following:

- (a) The facts contained herein are within my own personal knowledge.
- (b) I have satisfied myself that:
  - (i) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2017; and
- (c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2017, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C:

**Electrical and Telecomms Cables 90%**

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	90%
Local content %, as calculated in terms of SATS 1286:2011	

**Steel Products and components for construction 100%**

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	100%
Local content %, as calculated in terms of SATS 1286:2011	

**Wire products 100%**

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	100%
Local content %, as calculated in terms of SATS 1286:2011	

**Industrial Lead Batteries 50%**

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	50%
Local content %, as calculated in terms of SATS 1286:2011	

**Transformer Oil 100%**

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	100%
Local content %, as calculated in terms of SATS 1286:2011	

**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

Manufacture of Bushing 90%

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	100%
Local content %, as calculated in terms of SATS 1286:2011	

**If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above.**

**The local content percentages for each product has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E.**

- (d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SATS 1286:2017.
- (e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2017.

**SIGNATURE:** \_\_\_\_\_

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

**WITNESS No. 1** \_\_\_\_\_

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

**WITNESS No. 2** \_\_\_\_\_

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

## Annex C

### Local Content Declaration - Summary Schedule

<i>(C1)</i> <b>Tender No.</b>	CRAC_ELF_45981
<i>(C2)</i> <b>Tender description:</b>	Supply, Installation, Testing and Commissioning of 3KV DC TractionSubstation Equipments at Stryder and Maidi Substation.
<i>(C3)</i> <b>Designated product(s)</b>	Electrical and Telecomms Cables 90%
<i>(C4)</i> <b>Tender Authority:</b>	
<i>(C5)</i> <b>Tendering Entity name:</b>	
<i>(C6)</i> <b>Tender Exchange Rate:</b>	Pula <input style="width: 50px;" type="text"/> EU <input style="width: 50px;" type="text"/> GBP <input style="width: 50px;" type="text"/>
<i>(C7)</i> <b>Specified local content %</b>	90%

**Note:** VAT to be excluded from all calculations

Calculation of local content							
Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Tender value net of exempted imported content	Imported value	Local value	Local content % (per item)
<i>(C8)</i>	<i>(C9)</i>	<i>(C10)</i>	<i>(C11)</i>	<i>(C12)</i>	<i>(C13)</i>	<i>(C14)</i>	<i>(C15)</i>
1	Earthing cables						
2	HV and LV cables						
3	Wave filter cables						
4	Telecontrol cables						
5	500mm positive cables						
6	AC/DC distribution cables						
7	95mm copper earthing cable						

Tender summary			
Tender Qty	Total tender value	Total exempted imported content	Total Imported content
<i>(C16)</i>	<i>(C17)</i>	<i>(C18)</i>	<i>(C19)</i>

**Signature of tenderer from Annex B**

Date: \_\_\_\_\_

<i>(C20)</i> Total tender value	R 0
<i>(C21)</i> Total Exempt imported content	R 0
<i>(C22)</i> Total Tender value net of exempt imported content	R 0
<i>(C23)</i> Total Imported content	R 0
<i>(C24)</i> Total local content	R 0
<i>(C25)</i> Average local content % of tender	





## Annex E

### Local Content Declaration - Supporting Schedule to Annex C

(E1)	<b>Tender No.</b>	CRAC_ELF_45981
(E2)	<b>Tender description:</b>	Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipments at Stryder and Maidi Substation.
(E3)	<b>Designated products:</b>	Electrical and Telecomms Cables 90%
(E4)	<b>Tender Authority:</b>	
(E5)	<b>Tendering Entity name:</b>	

**Note: VAT to be excluded from all calculations**

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
<b>(E9) Total local products (Goods, Services and Works)</b>			R 0

(E10)	<b>Manpower</b> (Tenderer's manpower cost)	R 0
(E11)	<b>ly overheads</b> (Rental, depreciation & amortisation, utility costs, consumables etc.)	R 0
(E12)	<b>Administration overheads and mark-up</b> (Marketing, insurance, financing, interest etc.)	R 0
<b>(E13) Total local content</b>		R 0

**This total must correspond with Annex C - C24**

Signature of tenderer from Annex B

\_\_\_\_\_

Date: \_\_\_\_\_







## Annex E

### Local Content Declaration - Supporting Schedule to Annex C

(E1)	<b>Tender No.</b>	CRAC_ELF_45981	<div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <b>Note: VAT to be excluded from all calculations</b> </div>
(E2)	<b>Tender description:</b>	Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipments at Stryder and Maidi Substation.	
(E3)	<b>Designated products:</b>	Steel Products and components for construction 100%	
(E4)	<b>Tender Authority:</b>		
(E5)	<b>Tendering Entity name:</b>		

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
<b>(E9) Total local products (Goods, Services and Works)</b>			R 0

(E10)	<b>Manpower</b> (Tenderer's manpower cost)	R 0
(E11)	<b>ly overheads</b> (Rental, depreciation & amortisation, utility costs, consumables etc.)	R 0
(E12)	<b>Administration overheads and mark-up</b> (Marketing, insurance, financing, interest etc.)	R 0
<b>(E13) Total local content</b>		R 0

**This total must correspond with Annex C - C24**

Signature of tenderer from Annex B

\_\_\_\_\_

Date: \_\_\_\_\_

## Annex C

### Local Content Declaration - Summary Schedule

<i>(C1)</i> Tender No.	CRAC_ELF_45981		
<i>(C2)</i> Tender description:	Supply, Installation, Testing and Commissioning of 3KV DC TractionSubstation Equipments at Stryder and Maidi Substation.		
<i>(C3)</i> Designated product(s)	Batteries 50%		
<i>(C4)</i> Tender Authority:			
<i>(C5)</i> Tendering Entity name:			
<i>(C6)</i> Tender Exchange Rate:	Pula <input style="width: 50px;" type="text"/>	EU <input style="width: 50px;" type="text"/>	GBP <input style="width: 50px;" type="text"/>
<i>(C7)</i> Specified local content %	50%		

**Note: VAT to be excluded from all calculations**

Calculation of local content							
Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Tender value net of exempted imported content	Imported value	Local value	Local content % (per item)
<i>(C8)</i>	<i>(C9)</i>	<i>(C10)</i>	<i>(C11)</i>	<i>(C12)</i>	<i>(C13)</i>	<i>(C14)</i>	<i>(C15)</i>
1	Lead acid battery bank						
2							
3							
4							
5							
6							

Tender summary			
Tender Qty	Total tender value	Total exempted imported content	Total Imported content
<i>(C16)</i>	<i>(C17)</i>	<i>(C18)</i>	<i>(C19)</i>

**Signature of tenderer from Annex B**

\_\_\_\_\_

Date: \_\_\_\_\_

<i>(C20)</i> Total tender value	R 0
<i>(C21)</i> Total Exempt imported content	R 0
<i>(C22)</i> Total Tender value net of exempt imported content	R 0
<i>(C23)</i> Total Imported content	R 0
<i>(C24)</i> Total local content	R 0
<i>(C25)</i> Average local content % of tender	





## Annex E

### Local Content Declaration - Supporting Schedule to Annex C

(E1)	<b>Tender No.</b>	CRAC_ELF_45981
(E2)	<b>Tender description:</b>	Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipments at Stryder and Maidi Substation.
(E3)	<b>Designated products:</b>	Batteries 50%
(E4)	<b>Tender Authority:</b>	
(E5)	<b>Tendering Entity name:</b>	

**Note: VAT to be excluded from all calculations**

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
<b>(E9) Total local products (Goods, Services and Works)</b>			R 0

(E10) <b>Manpower</b>	(Tenderer's manpower cost)	R 0
(E11) <b>Overheads</b>	(Rental, depreciation & amortisation, utility costs, consumables etc.)	R 0
(E12) <b>Administration overheads and mark-up</b>	(Marketing, insurance, financing, interest etc.)	R 0
<b>(E13) Total local content</b>		R 0

**This total must correspond with Annex C - C24**

Signature of tenderer from Annex B

Date: \_\_\_\_\_

## Annex C

### Local Content Declaration - Summary Schedule

(C1) **Tender No.** CRAC\_ELF\_45981  
 (C2) **Tender description:** Supply, Installation, Testing and Commissioning of 3KV DC TractionSubstation Equipments at Stryder and Maidi Substation.  
 (C3) **Designated product(s)** Transfprmer oil 100%  
 (C4) **Tender Authority:**  
 (C5) **Tendering Entity name:**  
 (C6) **Tender Exchange Rate:** Pula  EU  GBP   
 (C7) **Specified local content %** 100%

**Note: VAT to be excluded from all calculations**

Calculation of local content							
Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Tender value net of exempted imported content	Imported value	Local value	Local content % (per item)
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)
1	Virgin Transformer Oil						
2							
3							
4							
5							
6							

Tender summary			
Tender Qty	Total tender value	Total exempted imported content	Total Imported content
(C16)	(C17)	(C18)	(C19)

**Signature of tenderer from Annex B**

Date: \_\_\_\_\_

<b>(C20) Total tender value</b>	R 0
<b>(C21) Total Exempt imported content</b>	R 0
<b>(C22) Total Tender value net of exempt imported content</b>	R 0
<b>(C23) Total Imported content</b>	R 0
<b>(C24) Total local content</b>	R 0
<b>(C25) Average local content % of tender</b>	





## Annex E

### Local Content Declaration - Supporting Schedule to Annex C

(E1)	<b>Tender No.</b>	CRAC_ELF_45981
(E2)	<b>Tender description:</b>	Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipments at Stryder and Maidi Substation.
(E3)	<b>Designated products:</b>	Transfprmer Oil 100%
(E4)	<b>Tender Authority:</b>	
(E5)	<b>Tendering Entity name:</b>	

**Note: VAT to be excluded from all calculations**

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
<b>(E9) Total local products (Goods, Services and Works)</b>			R 0

(E10) <b>Manpower</b>	(Tenderer's manpower cost)	R 0
(E11) <b>ly overheads</b>	(Rental, depreciation & amortisation, utility costs, consumables etc.)	R 0
(E12) <b>Administration overheads and mark-up</b>	(Marketing, insurance, financing, interest etc.)	R 0
<b>(E13) Total local content</b>		R 0

**This total must correspond with Annex C - C24**

Signature of tenderer from Annex B

Date: \_\_\_\_\_

## Annex C

### Local Content Declaration - Summary Schedule

<i>(C1)</i> <b>Tender No.</b>	CRAC_ELF_45981		
<i>(C2)</i> <b>Tender description:</b>	Supply, Installation, Testing and Commissioning of 3KV DC TractionSubstation Equipments at Stryder and Maidi Substation.		
<i>(C3)</i> <b>Designated product(s)</b>	Manufacture of Bushing 90%		
<i>(C4)</i> <b>Tender Authority:</b>			
<i>(C5)</i> <b>Tendering Entity name:</b>			
<i>(C6)</i> <b>Tender Exchange Rate:</b>	Pula <input style="width: 80px;" type="text"/>	EU <input style="width: 60px;" type="text"/>	GBP <input style="width: 60px;" type="text"/>
<i>(C7)</i> <b>Specified local content %</b>	90%		

**Note:** VAT to be excluded from all calculations

Calculation of local content							
Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Tender value net of exempted imported content	Imported value	Local value	Local content % (per item)
<i>(C8)</i>	<i>(C9)</i>	<i>(C10)</i>	<i>(C11)</i>	<i>(C12)</i>	<i>(C13)</i>	<i>(C14)</i>	<i>(C15)</i>
1	3kv wall bushing						
2							
3							
4							
5							
6							

Tender summary			
Tender Qty	Total tender value	Total exempted imported content	Total Imported content
<i>(C16)</i>	<i>(C17)</i>	<i>(C18)</i>	<i>(C19)</i>

**Signature of tenderer from Annex B**

\_\_\_\_\_

Date: \_\_\_\_\_

<i>(C20)</i> Total tender value	R 0
<i>(C21)</i> Total Exempt imported content	R 0
<i>(C22)</i> Total Tender value net of exempt imported content	R 0
<i>(C23)</i> Total Imported content	R 0
<i>(C24)</i> Total local content	R 0
<i>(C25)</i> Average local content % of tender	





## Annex E

### Local Content Declaration - Supporting Schedule to Annex C

(E1)	<b>Tender No.</b>	CRAC_ELF_45981
(E2)	<b>Tender description:</b>	Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipments at Stryder and Maidi Substation.
(E3)	<b>Designated products:</b>	Manufacture of Bushing 90%
(E4)	<b>Tender Authority:</b>	
(E5)	<b>Tendering Entity name:</b>	

**Note: VAT to be excluded from all calculations**

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
<b>(E9) Total local products (Goods, Services and Works)</b>			R 0

(E10) <b>Manpower</b>	(Tenderer's manpower cost)	R 0
(E11) <b>Overheads</b>	(Rental, depreciation & amortisation, utility costs, consumables etc.)	R 0
(E12) <b>Administration overheads and mark-up</b>	(Marketing, insurance, financing, interest etc.)	R 0
<b>(E13) Total local content</b>		R 0

**This total must correspond with Annex C - C24**

Signature of tenderer from Annex B

\_\_\_\_\_

Date: \_\_\_\_\_



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

**[..... 2024]**



**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.



Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

**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

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maidi Substation.

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## 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:

---

---

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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;

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maidi Substation.

- 
- 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

**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipments at Stryder and Maldi Substation.

**LOCAL CONTENT DECLARATION DOCUMENT**

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2017 and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].

1. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2017 as follows:

$$LC = [1 - x / y] * 100$$

Where

- x is the imported content in Rand
- y is the bid price in Rand excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) at 12:00 on the date of advertisement of the bid as indicated in paragraph 4.1 below.

**The SABS approved technical specification number SATS 1286:2017 is accessible on <http://www.thedtic.gov.za/sectors-and-services-2/industrial-development/industrial-procurement/> at no cost.**

2. **The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid is/are as follows:**

Item No.	Description of services, works or goods	Stipulated minimum threshold
1	Electrical and Telecomms Cables 90%	90%
2	Steel Products and components for construction 100%	100%
3	Wire products 100%	100%
4	Batteries 50%	50%
5	Transformer Oil 100%	100%
6	Manufacture of Bushing 90%	90%

3. Does any portion of the goods or services offered have any imported content?

*(Tick applicable box)*

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
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**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipments at Stryder and Maldi Substation.

- 3.1 If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by SARB for the specific currency at 12:00 on the date of advertisement of the bid.

The relevant rates of exchange information is accessible on [www.reservebank.co.za](http://www.reservebank.co.za)

Indicate the rate(s) of exchange against the appropriate currency in the table below (refer to Annex A of SATS 1286:2011):

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

NB: Bidders must submit proof of the SARB rate (s) of exchange used.

- 4. Where, after the award of a bid, challenges are experienced in meeting the stipulated minimum threshold for local content the dtic must be informed accordingly in order for the dti to verify and in consultation with the AO/AA provide directives in this regard.

**LOCAL CONTENT DECLARATION**  
**(REFER TO ANNEX B OF SATS 1286:2011)**

**LOCAL CONTENT DECLARATION BY CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY (CLOSE CORPORATION, PARTNERSHIP OR INDIVIDUAL)**

**IN RESPECT OF BID NO. ....**

**ISSUED BY:** (Procurement Authority / Name of Institution):

NB

- 1 The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.
- 2 Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on <http://www.thedtic.gov.za/sectors-and-services-2/industrial-development/industrial-procurement/> Bidders should first complete Declaration D. After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C. **Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph (c) below.** Declarations D and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

I, the undersigned, ..... (full names),

**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipments at Stryder and Maldi Substation.

do hereby declare, in my capacity as .....  
of .....(name of bidder entity), the following:

- (a) The facts contained herein are within my own personal knowledge.
- (b) I have satisfied myself that:
  - (i) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2017; and
- (c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2017, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C:

**Electrical and Telecomms Cables 90%**

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	90%
Local content %, as calculated in terms of SATS 1286:2011	

**Steel Products and components for construction 100%**

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	100%
Local content %, as calculated in terms of SATS 1286:2011	

**Wire products 100%**

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	100%
Local content %, as calculated in terms of SATS 1286:2011	

**Industrial Lead Batteries 50%**

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	50%
Local content %, as calculated in terms of SATS 1286:2011	

**Transformer Oil 100%**

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	100%
Local content %, as calculated in terms of SATS 1286:2011	

**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipments at Stryder and Maldi Substation.

Manufacture of Bushing 90%

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	100%
Local content %, as calculated in terms of SATS 1286:2011	

**If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above.**

**The local content percentages for each product has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E.**

- (d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SATS 1286:2017.
- (e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2017.

**SIGNATURE:** \_\_\_\_\_

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

**WITNESS No. 1** \_\_\_\_\_

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

**WITNESS No. 2** \_\_\_\_\_

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

## Annex C

### Local Content Declaration - Summary Schedule

<i>(C1)</i> <b>Tender No.</b>	CRAC_ELF_45981
<i>(C2)</i> <b>Tender description:</b>	Supply, Installation, Testing and Commissioning of 3KV DC TractionSubstation Equipments at Stryder and Maidi Substation.
<i>(C3)</i> <b>Designated product(s)</b>	Electrical and Telecomms Cables 90%
<i>(C4)</i> <b>Tender Authority:</b>	
<i>(C5)</i> <b>Tendering Entity name:</b>	
<i>(C6)</i> <b>Tender Exchange Rate:</b>	Pula <input style="width: 50px;" type="text"/> EU <input style="width: 50px;" type="text"/> GBP <input style="width: 50px;" type="text"/>
<i>(C7)</i> <b>Specified local content %</b>	90%

**Note: VAT to be excluded from all calculations**

Calculation of local content								Tender summary			
Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Tender value net of exempted imported content	Imported value	Local value	Local content % (per item)	Tender Qty	Total tender value	Total exempted imported content	Total Imported content
<i>(C8)</i>	<i>(C9)</i>	<i>(C10)</i>	<i>(C11)</i>	<i>(C12)</i>	<i>(C13)</i>	<i>(C14)</i>	<i>(C15)</i>	<i>(C16)</i>	<i>(C17)</i>	<i>(C18)</i>	<i>(C19)</i>
1	Earthing cables										
2	HV and LV cables										
3	Wave filter cables										
4	Telecontrol cables										
5	500mm positive cables										
6	AC/DC distribution cables										
7	95mm copper earthing cable										
									<i>(C20)</i> Total tender value	R 0	
									<i>(C21)</i> Total Exempt imported content	R 0	
									<i>(C22)</i> Total Tender value net of exempt imported content	R 0	
									<i>(C23)</i> Total Imported content	R 0	
									<i>(C24)</i> Total local content	R 0	
									<i>(C25)</i> Average local content % of tender		

**Signature of tenderer from Annex B**

Date: \_\_\_\_\_



## Annex E

### Local Content Declaration - Supporting Schedule to Annex C

(E1)	<b>Tender No.</b>	CRAC_ELF_45981
(E2)	<b>Tender description:</b>	Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipments at Stryder and Maidi Substation.
(E3)	<b>Designated products:</b>	Electrical and Telecomms Cables 90%
(E4)	<b>Tender Authority:</b>	
(E5)	<b>Tendering Entity name:</b>	

**Note: VAT to be excluded from all calculations**

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
<b>(E9) Total local products (Goods, Services and Works)</b>			R 0

(E10)	<b>Manpower</b> (Tenderer's manpower cost)	R 0
(E11)	<b>ly overheads</b> (Rental, depreciation & amortisation, utility costs, consumables etc.)	R 0
(E12)	<b>Administration overheads and mark-up</b> (Marketing, insurance, financing, interest etc.)	R 0
<b>(E13) Total local content</b>		R 0

**This total must correspond with Annex C - C24**

Signature of tenderer from Annex B

\_\_\_\_\_

Date: \_\_\_\_\_





## Annex E

### Local Content Declaration - Supporting Schedule to Annex C

(E1)	<b>Tender No.</b>	CRAC_ELF_45981	<div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <b>Note: VAT to be excluded from all calculations</b> </div>
(E2)	<b>Tender description:</b>	Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipments at Stryder and Maidi Substation.	
(E3)	<b>Designated products:</b>	Steel Products and components for construction 100%	
(E4)	<b>Tender Authority:</b>		
(E5)	<b>Tendering Entity name:</b>		

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
<b>(E9) Total local products (Goods, Services and Works)</b>			R 0

(E10)	<b>Manpower</b> (Tenderer's manpower cost)	R 0
(E11)	<b>ly overheads</b> (Rental, depreciation & amortisation, utility costs, consumables etc.)	R 0
(E12)	<b>Administration overheads and mark-up</b> (Marketing, insurance, financing, interest etc.)	R 0
<b>(E13) Total local content</b>		R 0

**This total must correspond with Annex C - C24**

Signature of tenderer from Annex B

Date: \_\_\_\_\_



Imported Content Declaration - Supporting Schedule to Annex C

(D1) Tender No. **CRAC\_ELF\_45981**

(D2) Tender description: Supply, Installation, Testing and Commissioning of 3KV DC TrACTION Substation Equipments at Stryder and Maidi Substation.

(D3) Designated Products: Batteries 50%

(D4) Tender Authority:

(D5) Tendering Entity name:

(D6) Tender Exchange Rate: Pula

Note: VAT to be excluded from all calculations

EU R 9.00 GBP R 12.00

A. Exempted imported content				Calculation of imported content					
Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)

Summary	
Tender Qty	Exempted imported value
(D17)	(D18)
(D19) Total exempt imported value	
	R 0

This total must correspond with Annex C - C 21

B. Imported directly by the Tenderer				Calculation of imported content					
Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)

Summary	
Tender Qty	Total imported value
(D30)	(D31)
(D32) Total imported value by tenderer	
	R 0

C. Imported by a 3rd party and supplied to the Tenderer				Calculation of imported content					
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)

Summary	
Quantity Imported	Total imported value
(D43)	(D44)
(D45) Total imported value by 3rd party	
	R 0

D. Other foreign currency payments				
Calculation of foreign currency payments				
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange
(D46)	(D47)	(D48)	(D49)	(D50)

Summary of payments	
Local value of payments	
	(D51)

Signature of tenderer from Annex B

Date:

(D52) Total of foreign currency payments declared by tenderer and/or 3rd party

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above

This total must correspond with Annex C - C 23

## Annex E

### Local Content Declaration - Supporting Schedule to Annex C

(E1)	<b>Tender No.</b>	CRAC_ELF_45981
(E2)	<b>Tender description:</b>	Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipments at Stryder and Maidi Substation.
(E3)	<b>Designated products:</b>	Batteries 50%
(E4)	<b>Tender Authority:</b>	
(E5)	<b>Tendering Entity name:</b>	

**Note: VAT to be excluded from all calculations**

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
<b>(E9) Total local products (Goods, Services and Works)</b>			R 0

(E10) <b>Manpower</b>	(Tenderer's manpower cost)	R 0
(E11) <b>Overheads</b>	(Rental, depreciation & amortisation, utility costs, consumables etc.)	R 0
(E12) <b>Administration overheads and mark-up</b>	(Marketing, insurance, financing, interest etc.)	R 0
<b>(E13) Total local content</b>		R 0

**This total must correspond with Annex C - C24**

Signature of tenderer from Annex B

\_\_\_\_\_

Date: \_\_\_\_\_

## Annex C

### Local Content Declaration - Summary Schedule

(C1) **Tender No.** CRAC\_ELF\_45981  
 (C2) **Tender description:** Supply, Installation, Testing and Commissioning of 3KV DC TractionSubstation Equipments at Stryder and Maidi Substation.  
 (C3) **Designated product(s)** Transfprmer oil 100%  
 (C4) **Tender Authority:**  
 (C5) **Tendering Entity name:**  
 (C6) **Tender Exchange Rate:** Pula  EU  GBP   
 (C7) **Specified local content %** 100%

**Note: VAT to be excluded from all calculations**

Calculation of local content							
Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Tender value net of exempted imported content	Imported value	Local value	Local content % (per item)
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)
1	Virgin Transformer Oil						
2							
3							
4							
5							
6							

Tender summary			
Tender Qty	Total tender value	Total exempted imported content	Total Imported content
(C16)	(C17)	(C18)	(C19)

**Signature of tenderer from Annex B**

Date: \_\_\_\_\_

<b>(C20) Total tender value</b>	R 0
<b>(C21) Total Exempt imported content</b>	R 0
<b>(C22) Total Tender value net of exempt imported content</b>	R 0
<b>(C23) Total Imported content</b>	R 0
<b>(C24) Total local content</b>	R 0
<b>(C25) Average local content % of tender</b>	



## Annex E

### Local Content Declaration - Supporting Schedule to Annex C

(E1)	<b>Tender No.</b>	CRAC_ELF_45981
(E2)	<b>Tender description:</b>	Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipments at Stryder and Maidi Substation.
(E3)	<b>Designated products:</b>	Transfprmer Oil 100%
(E4)	<b>Tender Authority:</b>	
(E5)	<b>Tendering Entity name:</b>	

**Note: VAT to be excluded from all calculations**

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
<b>(E9) Total local products (Goods, Services and Works)</b>			R 0

(E10) <b>Manpower</b>	(Tenderer's manpower cost)	R 0
(E11) <b>ly overheads</b>	(Rental, depreciation & amortisation, utility costs, consumables etc.)	R 0
(E12) <b>Administration overheads and mark-up</b>	(Marketing, insurance, financing, interest etc.)	R 0
<b>(E13) Total local content</b>		R 0

**This total must correspond with Annex C - C24**

Signature of tenderer from Annex B

Date: \_\_\_\_\_

## Annex C

### Local Content Declaration - Summary Schedule

<i>(C1)</i> <b>Tender No.</b>	CRAC_ELF_45981
<i>(C2)</i> <b>Tender description:</b>	Supply, Installation, Testing and Commissioning of 3KV DC TractionSubstation Equipments at Stryder and Maidi Substation.
<i>(C3)</i> <b>Designated product(s)</b>	Manufacture of Bushing 90%
<i>(C4)</i> <b>Tender Authority:</b>	
<i>(C5)</i> <b>Tendering Entity name:</b>	
<i>(C6)</i> <b>Tender Exchange Rate:</b>	Pula <input style="width: 80px;" type="text"/> EU <input style="width: 60px;" type="text"/> GBP <input style="width: 60px;" type="text"/>
<i>(C7)</i> <b>Specified local content %</b>	90%

**Note:** VAT to be excluded from all calculations

Calculation of local content							
Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Tender value net of exempted imported content	Imported value	Local value	Local content % (per item)
<i>(C8)</i>	<i>(C9)</i>	<i>(C10)</i>	<i>(C11)</i>	<i>(C12)</i>	<i>(C13)</i>	<i>(C14)</i>	<i>(C15)</i>
1	3kv wall bushing						
2							
3							
4							
5							
6							

Tender summary			
Tender Qty	Total tender value	Total exempted imported content	Total Imported content
<i>(C16)</i>	<i>(C17)</i>	<i>(C18)</i>	<i>(C19)</i>

**Signature of tenderer from Annex B**

\_\_\_\_\_

Date: \_\_\_\_\_

<i>(C20)</i> Total tender value	R 0
<i>(C21)</i> Total Exempt imported content	R 0
<i>(C22)</i> Total Tender value net of exempt imported content	R 0
<i>(C23)</i> Total Imported content	R 0
<i>(C24)</i> Total local content	R 0
<i>(C25)</i> Average local content % of tender	

Imported Content Declaration - Supporting Schedule to Annex C

(D1) Tender No. **CRAC\_ELF\_45981**

(D2) Tender description: Supply, Installation, Testing and Commissioning of 3KV DC TrACTION Substation Equipments at Stryder and Maidi Substation.

(D3) Designated Products: Manufacture of Bushing 90%

(D4) Tender Authority:

(D5) Tendering Entity name: Pula

(D6) Tender Exchange Rate: EU R 9.00 GBP R 12.00

Note: VAT to be excluded from all calculations

A. Exempted imported content				Calculation of imported content					
Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)

Summary	
Tender Qty	Exempted imported value
(D17)	(D18)
(D19) Total exempt imported value	
	R 0

This total must correspond with Annex C - C 21

B. Imported directly by the Tenderer				Calculation of imported content					
Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)

Summary	
Tender Qty	Total imported value
(D30)	(D31)
(D32) Total imported value by tenderer	
	R 0

C. Imported by a 3rd party and supplied to the Tenderer				Calculation of imported content					
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)

Summary	
Quantity Imported	Total imported value
(D43)	(D44)
(D45) Total imported value by 3rd party	
	R 0

D. Other foreign currency payments				
Calculation of foreign currency payments				
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange
(D46)	(D47)	(D48)	(D49)	(D50)

Summary of payments	
Local value of payments	
	(D51)

Signature of tenderer from Annex B

Date: \_\_\_\_\_

(D52) Total of foreign currency payments declared by tenderer and/or 3rd party

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above

R 0

This total must correspond with Annex C - C 23

## Annex E

### Local Content Declaration - Supporting Schedule to Annex C

(E1)	<b>Tender No.</b>	CRAC_ELF_45981
(E2)	<b>Tender description:</b>	Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipments at Stryder and Maidi Substation.
(E3)	<b>Designated products:</b>	Manufacture of Bushing 90%
(E4)	<b>Tender Authority:</b>	
(E5)	<b>Tendering Entity name:</b>	

**Note: VAT to be excluded from all calculations**

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
<b>(E9) Total local products (Goods, Services and Works)</b>			R 0

(E10) <b>Manpower</b>	(Tenderer's manpower cost)	R 0
(E11) <b>Overheads</b>	(Rental, depreciation & amortisation, utility costs, consumables etc.)	R 0
(E12) <b>Administration overheads and mark-up</b>	(Marketing, insurance, financing, interest etc.)	R 0
<b>(E13) Total local content</b>		R 0

**This total must correspond with Annex C - C24**

Signature of tenderer from Annex B

\_\_\_\_\_

Date: \_\_\_\_\_

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maidi Substation.

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## **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.



Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maidi Substation.

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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.

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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 .....

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## **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.

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

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- 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.



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Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

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***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

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Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

## T2.2-21: Insurance provided by the *Contractor*.

Clause 84.1 in NEC3 Engineering & Construction 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.

Insurance against (See clause 84.2 of the ECC)	Name of Insurance Company	Cover	Premium
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)			

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Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maidi Substation.

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## T2.2-22: Form of Intent to Provide a Performance Guarantee

It is hereby agreed by the Tenderer that a Performance Guarantee drafted **exactly** as provided in the tender documents will be provided by the Guarantor named below, which is a **bank or insurer registered in South Africa**:

Name of Guarantor  
(Bank/Insurer)

.....

Address

.....

The Performance Guarantee shall be provided within **2 (Two)** weeks after the Contract Date defined in the contract unless otherwise agreed to by the parties.

Signed

.....

Name

.....

Capacity

.....

On behalf of (name of tenderer)

.....

.....

Date

.....

### Confirmed by Guarantor's Authorised Representative

Signature(s)

.....

Name (print)

.....

Capacity

.....

On behalf of Guarantor  
(Bank/insurer)

.....

Date

.....



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## **T2.2-23: Three (3) years audited financial statements**

Attached to this schedule is the last three (3) years audited financial statements of the single tenderer/members of the Joint Venture.

NAME OF COMPANY/IES and INDEX OF ATTACHMENTS:

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.....

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.....

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.....

.....

.....



## C1.1: Form of Offer & Acceptance

### Offer

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

**Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.**

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	<b>R</b>
Value Added Tax @ 15% is	<b>R</b>
The offered total of the Prices inclusive of VAT is	<b>R</b>
(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:

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## Acceptance

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

The terms of the contract, are contained in:

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

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

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

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

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

**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.



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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)*

Name &  
signature of  
witness

Date



**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		

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

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

**For the Tenderer:**

**For the Employer**

Signature

Name

Capacity

On behalf of

*(Insert name and address of organisation)*

Transnet SOC Ltd

Name & signature of witness

Date



## C1.2 Contract Data

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

Clause	Statement	Data
1	<p><b>General</b></p> <p>The <i>conditions of contract</i> are the core clauses and the clauses for main Option</p>	<p><b>B: Priced contract with bill of quantities</b></p>
	<p>dispute resolution Option</p>	<p><b>W1: Dispute resolution procedure</b></p>
	<p>and secondary Options</p>	<p><b>X2 Changes in the law</b></p> <p><b>X7: Delay damages</b></p> <p><b>X13: Performance Bond</b></p> <p><b>X18: Limitation of liability</b></p> <p><b>Z: <i>Additional conditions of contract</i></b></p>
	<p>of the NEC3 Engineering and Construction Contract June 2005 (amended June 2006 and April 2013)</p>	
10.1	<p>The <i>Employer</i> is:</p>	<p><b>Transnet SOC Ltd</b> <b>(Registration No. 1990/000900/30)</b></p>
	<p>Address</p>	<p>Registered address: <b>Transnet Corporate Centre</b> <b>138 Eloff Street</b> <b>Braamfontein</b> <b>Johannesburg</b> <b>2000</b></p>
	<p>Having elected its Contractual Address for the purposes of this contract as:</p>	<p><b>Transnet Freight Rail</b> <b>01 Station RD,</b> <b>Infra Building,</b> <b>Room 10,</b> <b>Millsite, Krugersdorp</b></p>

**Transnet Freight Rail**

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**TRANSNET**

10.1	The <i>Project Manager</i> is: (Name)	<b>Kagiso Osupile</b>
	Address	<b>01 Station RD, Infra Building, Room 10, Millsite, Krugersdorp</b>
	Tel	<b>0835619735</b>
	e-mail	<b>Kagiso.osupile@transnet.net</b>
11.2(13)	The <i>works</i> are	<b>Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.</b>
11.2(14)	The following matters will be included in the Risk Register	<b>Working next to live electrical equipment/wires. Working close to moving trains.</b>
11.2(15)	The <i>boundaries of the site</i> are	<b>Site and areas adjacent to it</b>
11.2(16)	The Site Information is in	<b>Part C4</b>
11.2(19)	The Works Information is in	<b>Part C3</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>2 weeks</b>
<b>2</b>	<b>The <i>Contractor's</i> main responsibilities</b>	<b>No additional data is required for this section of the <i>conditions of contract</i>.</b>
<b>3</b>	<b>Time</b>	
11.2(3)	The <i>completion date</i> for the whole of the <i>works</i> is	<b>TBA</b>
31.1	The <i>Contractor</i> is to submit a first programme for acceptance within	<b>2 weeks of the Contract Date.</b>
31.2	The <i>starting date</i> is	<b>TBA</b>
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than	<b>2 weeks.</b>

## Transnet Freight Rail

Contract Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

TRANSNET



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35.1	The <i>Employer</i> is not willing to take over the <i>works</i> before the Completion Date.	
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<b>4</b>	<b>Testing and Defects</b>	
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42.2	The <i>defects date</i> is	<b>52 (fifty-two) weeks after Completion of the whole of the <i>works</i>.</b>
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43.2	The <i>defect correction period</i> is	<b>2 weeks</b>
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<b>5</b>	<b>Payment</b>	
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50.1	The <i>assessment interval</i> is	<b>25<sup>th</sup> (twenty fifth) day of each successive monthly on the month.</b>
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51.1	The <i>currency of this contract</i> is the	<b>South African Rand.</b>
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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>
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51.4	The <i>interest rate</i> is	<b>the prime lending rate of Standard Bank of South Africa.</b>
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<b>6</b>	<b>Compensation events</b>	
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60.1(13)	The <i>weather measurements</i> to be recorded for each calendar month are,	<b>the cumulative rainfall (mm)</b>  <b>the number of days with rainfall more than 10 mm</b>  <b>the number of days with minimum air temperature less than 0 degrees Celsius</b>  <b>the number of days with snow lying at 08:00 hours South African Time</b>  <b>and these measurements:</b>
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	The place where weather is to be recorded (on the Site) is:	<b>The <i>Contractor's</i> Site establishment area</b>
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	The <i>weather data</i> are the records of past <i>weather measurements</i> for each calendar month which were recorded at:	<b>Maldi and Stryder</b>
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and which are available from: **South African Weather Service 012 367 6023**  
or [info3@weathersa.co.za](mailto:info3@weathersa.co.za).

<b>7</b>	<b>Title</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>
84.1	The <i>Employer</i> provides these insurances from the Insurance Table	
	1 Insurance against:	<b>Loss of or damage to the <i>works</i>, Plant and Materials is as stated in the Insurance policy for Contract Works/ Public Liability.</b>
	Cover / indemnity:	<b>to the extent as stated in the insurance policy for Contract Works / Public Liability</b>
	The deductibles are:	<b>as stated in the insurance policy for Contract Works / Public Liability</b>
	2 Insurance against:	<b>Loss of or damage to property (except the <i>works</i>, Plant and Materials &amp; Equipment) and liability for bodily injury to or death of a person (not an employee of the <i>Contractor</i>) arising out of or in connection with the performance of the Contract as stated in the insurance policy for Contract Works / Public Liability</b>
	Cover / indemnity	<b>Is to the extent as stated in the insurance policy for Contract Works / Public Liability</b>
	The deductibles are	<b>as stated in the insurance policy for Contract Works / Public Liability</b>
	3 Insurance against:	<b>Loss of or damage to Equipment (Temporary Works only) as stated in the insurance policy for contract Works and Public Liability</b>
	Cover / indemnity	<b>Is to the extent as stated in the insurance policy for Contract Works / Public Liability</b>



The deductibles are:	<b>As stated in the insurance policy for Contract Works / Public Liability</b>
4 Insurance against:	<b>Contract Works SASRIA insurance subject to the terms, exceptions and conditions of the SASRIA coupon</b>
Cover / indemnity	<b>Cover / indemnity is to the extent provided by the SASRIA coupon</b>
The deductibles are	<b>The deductibles are, in respect of each and every theft claim, 0,1% of the contract value subject to a minimum of R2,500 and a maximum of R25,000.</b>
Note:	<b>The deductibles for the insurance as stated above are listed in the document titled "Certificate of Insurance: Transnet (SOC) Limited Principal Controlled Insurance."</b>
84.1	<p>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</p> <p>The <i>Contractor</i> provides these additional Insurances</p> <p><b>The <i>Contractor</i> must comply at a minimum with the provisions of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended.</b></p> <ol style="list-style-type: none"> <li><b>1 Where the contract requires that the design of any part of the <i>works</i> shall be provided by the <i>Contractor</i> the <i>Contractor</i> shall satisfy the <i>Employer</i> that professional indemnity insurance cover in connection therewith has been affected</b></li> <li><b>2 Where the contract involves manufacture, and/or fabrication of Plant &amp; Materials, components or other goods to be incorporated into the <i>works</i> at premises other than the site, the <i>Contractor</i> shall satisfy the <i>Employer</i> that such plant &amp; materials, components or other goods for incorporation in the <i>works</i> are adequately insured during manufacture and/or fabrication and transportation to the site.</b></li> </ol>



- 
- 3 Should the *Employer* have an insurable interest in such items during manufacture, and/or fabrication, such interest shall be noted by endorsement to the *Contractor's* policies of insurance as well as those of any sub-contractor**
  - 4 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.**
  - 5 The insurance coverage referred to in 1, 2, 3 and 4 above shall be obtained from an insurer(s) in terms of an insurance policy approved by the *Employer*. The *Contractor* shall arrange with the insurer to submit to the *Project Manager* the original and the duplicate original of the policy or policies of insurance and the receipts for payment of current premiums, together with a certificate from the insurer or insurance broker concerned, confirming that the policy or policies provide the full coverage as required. The original policy will be returned to the *Contractor*.**

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84.2 The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with this contract for any one event is

**Whatever the *Contractor* requires in addition to the amount of insurance taken out by the *Employer* for the same risk.**



84.2	The insurance against loss of or damage to the works, Plant and Materials as stated in the insurance policy for contract works and public liability selected from:	<b>Principal Controlled Insurance policy for Contract</b>
<b>9</b>	<b>Termination</b>	<b>There is no additional 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>B</b>	<b>Priced contract with Bill of Quantities</b>	<b>No additional data is required for this Option.</b>
60.6	The <i>method of measurement</i> is	<b>The Bill of Quantities have been measured in accordance with SANS 1200 unless indicated otherwise.</b>
<b>11</b>	<b>Data for Option W1</b>	
W1.1	The <i>Adjudicator</i> is	<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 Chairman of the Association of Arbitrators (Southern Africa)</b>  <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>Johannesburg, South Africa</b>



The person or organisation who will choose an arbitrator

- if the Parties cannot agree a choice or
- if the arbitration procedure does not state who selects an arbitrator, is

**The Chairman of the Association of Arbitrators (Southern Africa)**

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**12 Data for secondary Option clauses**

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**X2 Changes in the law No additional data is required for this Option**

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**X7 Delay damages**

X7.1 Delay damages for Completion of the whole of the *works* are **R 1, 000.00 per day**

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**X13 Performance bond**

X13.1 The amount of the performance bond is **5% of the total of the Prices**

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**X18 Limitation of liability**

**Transnet Freight Rail**

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Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maidi Substation.

TRANSNET



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- |       |   |   |
|-------|---|---|
| X18.1 | The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to:  | <b>Nil</b>  |
| 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 which are not listed on the Defects Certificate 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 excluded matters, is limited to: | <b>The Total of the Prices</b>                            |
| X18.5 | The <i>end of liability date</i> is   | <b>5 years after Completion of the whole of the works</b> |



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**Z Additional conditions of contract are:**

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**Z1 Obligations in respect of Job Creation**

**Z1.1** It will be a material term of this contract that the *Contractor* must contribute to the *Employer's* job-creation objectives as set out in Returnable Schedule T2.2-14

**Z1.2** The *Contractor's* undertaking as to the number of new jobs created due to the award of this contract as set out in Returnable Schedule T2.2-14 will constitute a binding agreement throughout the duration of the contract until Completion, if not, it will be deemed that the *Contractor* has failed in full to meet this specific material term of the contract, which may constitute a reason for termination..

**Z1.3** The *Contractor* shall provide to the *Employer*, on a monthly basis or upon receiving an instruction to do so by the *Project Manager*, any documentation and/or evidence required by the *Employer*, which in the *Employer's* opinion would be necessary to verify whether the *Contractor* has maintained the job-creation undertaking as stipulated in Returnable Schedule T2.2-14. The *Contractor* shall provide the said documentation and/or evidence within the period stated or as instructed. The provision of the documentation and/or evidence shall not constitute a compensation event.

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**Z2 Additional clause relating to  
Performance Bonds and/or  
Guarantees**

**Z2.1**

**The Performance Guarantee under X13 above shall be an irrevocable, on-demand performance guarantee, to be issued exactly in the form of the Pro Forma documents provided for this purpose under C1.3 (Forms of Securities), in favour of the *Employer* by a financial institution reasonably acceptable to the *Employer*.**

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**Z3 Additional clauses relating to Joint Venture**

**Z3.1**

**Insert the additional core clause 27.5**

**27.5. In the instance that the *Contractor* is a joint venture, the *Contractor* shall provide the *Employer* with a certified copy of its signed joint venture agreement, and in the instance that the joint venture is an 'Incorporated Joint Venture,' the Memorandum of Incorporation, within 4 (four) weeks of the Contract Date.**

**The Joint Venture agreement shall contain but not be limited to the following:**

- **A brief description of the Contract and the Deliverables;**
- **The name, physical address, communications addresses and domicilium citandi et executandi of each of the constituents and of the Joint Venture;**
- **The constituent's interests;**
- **A schedule of the insurance policies, sureties, indemnities and guarantees which must be taken out by the Joint Venture and by the individual constituents;**
- **Details of an internal dispute resolution procedure;**
- **Written confirmation by all of the constituents:**
  - i. **of their joint and several liabilities to the *Employer* to Provide the Works;**
  - ii. **identification of the lead partner in the joint venture confirming the authority of the lead partner to bind the joint venture through the *Contractor's* representative;**
  - iii. **Identification of the roles and responsibilities of the**



**constituents to provide the Works.**

- **Financial requirements for the Joint Venture:**

**iv. the working capital requirements for the Joint Venture and the extent to which and manner whereby this will be provided and/or guaranteed by the constituents from time to time;**

**v. the names of the auditors and others, if any, who will provide auditing and accounting services to the Joint Venture.**

**Z3.2**

**Insert additional core clause 27.6**

**27.6. The *Contractor* shall not alter its composition or legal status of the Joint Venture without the prior approval of the *Employer*.**

**Z4 Additional obligations in respect of Termination**

**Z4.1**

**The following will be included under core clause 91.1:**

**In the second main bullet, after the word 'partnership' add 'joint venture whether incorporate or otherwise (including any constituent of the joint venture)' and**

**Under the second main bullet, insert the following additional bullets after the last sub-bullet:**

- **commenced business rescue proceedings (R22)**
- **repudiated this Contract (R23)**



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<b>Z4.2</b>	<b>Termination Table</b>	<b>The following will be included under core clause 90.2 Termination Table as follows:</b>  <b>Amend "A reason other than R1 – R21" to "A reason other than R1 – R23"</b>
<b>Z4.3</b>		<b>Amend "R1 – R15 or R18" to "R1 – R15, R18, R22 or R23."</b>

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<b>Z5</b>	<b>Right Reserved by the Employer to Conduct Vetting through SSA</b>	
<b>Z5.1</b>		<b>The Employer 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:</b>  <ol style="list-style-type: none"><li><b>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.</b></li><li><b>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.</b></li><li><b>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.</b></li></ol>

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<b>Z6</b>	<b>Additional Clause Relating to Collusion in the Construction Industry</b>	
<b>Z6.1</b>		<b>The contract award is made without prejudice to any rights the Employer may have to take appropriate action later with regard to any declared tender rigging including blacklisting.</b>

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**Z7 Protection of Personal Information Act**

**Z7.1**

**The *Employer* and the *Contractor* 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.**

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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 Engineering and Construction Contract - June 2005 (with amendments June 2006 and April 2013) and the relevant parts of its Guidance Notes (ECC3-GN) in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on pages 156 to 158 of the ECC3 Guidance Notes.

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	%
24.1	The <i>Contractor's</i> key persons are:	
	1 Name:	
	Job:	
	Responsibilities:	
	Qualifications:	
	Experience:	
	2 Name:	
	Job	
	Responsibilities:	
	Qualifications:	
	Experience:	

**Transnet Freight Rail**

Contract Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

**TRANSNET**



		<b>CV's (and further key persons data including CVs) are appended to Tender Schedule entitled.</b>		
<b>B</b>	<b>Priced contract with bill of quantities</b>			
11.2(21)	The <i>bill of quantities</i> is in			
11.2(31)	The tendered total of the Prices is	(in figures)	(in words), excluding VAT	
	<b>Data for Schedules of Cost Components</b>	<i>Note "SCC" means Schedule of Cost Components starting on page 60 of ECC, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC.</i>		

<b>B</b>	<b>Priced contract with bill of quantities</b>	<b>Data for the Shorter Schedule of Cost Components</b>		
41 in SSCC	The percentage for people overheads is:	<b>%</b>		
21 in SSCC	The published list of Equipment is the last edition of the list published by			
	The percentage for adjustment for Equipment in the published list is	<b>% (state plus or minus)</b>		
22 in SSCC	The rates of other Equipment are:	<b>Equipment</b>	<b>Size or capacity</b>	<b>Rate</b>
61 in SSCC	The hourly rates for Defined Cost of design outside the Working Areas are	<b>Category of employee</b>		<b>Hourly rate</b>

**Transnet Freight Rail**

Contract Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

**TRANSNET**



62 in SSCC	The percentage for design overheads is	<b>%</b>	
63 in SSCC	The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are:		



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## **PART 2: PRICING DATA**

<b>Document reference</b>	<b>Title</b>	<b>No of pages</b>
C2.1	Pricing instructions: Option B	5
C2.2	The <i>bill of quantities</i>	6

## C2.1 Pricing instructions: Option B

### 1. The *conditions of contract*

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

Clause 11 in NEC3 Engineering and Construction Contract, June 2005 and 2013 (ECC) Option B states:

**Identified  
and defined  
terms**

11

11.2

(21) The Bill of Quantities is the *bill of quantities* as changed in accordance with this contract to accommodate implemented compensation events and for accepted quotations for acceleration.

(22) Defined Cost is the cost of the components in the Shorter Schedule of Cost Components whether work is subcontracted or not excluding the cost of preparing quotations for compensation events.

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

- the quantity of the work which the *Contractor* has completed for each item in the Bill of Quantities multiplied by the rate and
- a proportion of each lump sum which is the proportion of the work covered by the item which the *Contractor* has completed.

Completed work is work without Defects which would either delay or be covered by immediately following work.

(31) The Prices are the lump sums and the amounts obtained by multiplying the rates by the quantities for the items in the Bill of Quantities.

This confirms that Option B is a re-measurement contract and the bill comprises only items measured using quantities and rates or stated as lump sums. Value related items are not used. Time related items are items measured using rates where the rate is a unit of time.

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## **1.2. Function of the Bill of Quantities**

Clause 55.1 in Option B states, "Information in the Bill of Quantities is not Works Information or Site Information". This confirms that instructions to do work or how it is to be done are not included in the Bill, but in the Works Information. This is further confirmed by Clause 20.1 which states, "The *Contractor* Provides the Works in accordance with the Works Information". Hence the *Contractor* does **not** Provide the Works in accordance with the Bill of Quantities. The Bill of Quantities is only a pricing document.

## **1.3. Guidance before pricing and measuring**

Employers preparing tenders or contract documents, and tendering contractors are advised to consult the sections dealing with the bill of quantities in the NEC3 Engineering and Construction Contract (June 2005) Guidance Notes before preparing the *bill of quantities* or before entering rates and lump sums into the *bill*.

Historically bill of quantities based contracts in South Africa have been influenced by the different approaches of the civil engineering and building sectors of the industry through their respective discipline based standard forms of contract and methods of measurement. This is particularly apparent in the approach to the Preliminary and General bill. On the other hand, because ECC caters for a number of disciplines in the same contract, including electrical works, a different approach not currently found in local methods of measurement to the Preliminary & General bill items may have been used.

The NEC approach to the P & G bill assumes use will be made of method related charges for Equipment applied to Providing the Works based on durations shown in the Accepted Programme, fixed charges for the use of Equipment that is required throughout the construction phase, time related charges for people working in a supervisory capacity for the period required, and lump sum charges for other facilities or services not directly related to performing work items typically included in other parts of the bill.

## 2. Measurement and payment

### 2.1. Symbols

The units of measurement described in the Bill of Quantities are metric units abbreviated as follows:

<b>Abbreviation</b>	<b>Unit</b>
%	percent
h	hour
ha	hectare
kg	kilogram
kl	kilolitre
km	kilometre
km-pass	kilometre-pass
kPa	kilopascal
kW	kilowatt
l	litre
m	metre
mm	millimetre
m <sup>2</sup>	square metre
m <sup>2</sup> -pass	square metre pass
m <sup>3</sup>	cubic metre
m <sup>3</sup> -km	cubic metre-kilometre
MN	meganewton
MN.m	meganewton-metre

MPa	megapascal
No.	number
Prov sum <sup>1</sup>	provisional sum
PC-sum	prime cost sum
R/only	Rate only
sum	Lump sum
t	ton (1000kg)
W/day	Work day

## 2.2. General assumptions

- 2.2.1. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance has been made in the quantities for waste.
- 2.2.2. The Prices and rates stated for each item in the Bill of Quantities shall be treated as being fully inclusive of all work, risks, liabilities, obligations, overheads, profit and everything necessary as incurred or required by the *Contractor* in carrying out or providing that item.
- 2.2.3. Clause 63.13 in Option B provides that these rates and Prices may be used as a basis for assessment of compensation events instead of Defined Cost.
- 2.2.4. Where this contract requires detailed drawings, designs or other information to be provided, and no rates or prices are included in the *bill* specifically for such matters, then the *Contractor* is deemed to have allowed for all costs associated with such requirements within the tendered rates and Prices in the Bill of Quantities.
- 2.2.5. An item against which no Price is entered will be treated as covered by other Prices or rates in the *bill of quantities*. If a number of items are grouped together for pricing purposes, this will be treated as a single lump sum.

<sup>1</sup> Provisional Sums should not be used unless absolutely unavoidable. Rather include specifications and associated bill items for the most likely scope of work, and then change later using the compensation event procedure if necessary. This is because tenderers cannot programme effectively for unknown scopes of work

2.2.6. The quantities contained in the Bill of Quantities may not be final and do not necessarily represent the actual amount of work to be done. The quantities of work assessed and certified for payment by the *Project Manager* at each assessment date will be used for determining payments due and not the quantities given in the Bill of Quantities.

2.2.7. The short descriptions of the items of payment given in the *bill of quantities* are only for the purposes of identifying the items. More detail regarding the extent of the work entailed under each item is provided in the Works Information.

### **2.3. Departures from the *method of measurement***

### **2.4. Amplification of or assumptions about measurement items**

For the avoidance of doubt the following is provided to assist in the interpretation of descriptions given in the *method of measurement*. In the event of any ambiguity or inconsistency between the statements in the *method of measurement* and this section, the interpretation given in this section shall be used.

## C2.2 The *bill of quantities*

### BILL OF QUANTITIES

Price List					
It	Description	Unit	Qty	Rate	Price
<b>A</b>	<b>MAIDI 3KV DC TRACTION SUBSTATION</b>				
1	Supply and Install <b>AC primary circuit breaker control panel</b> . They must have all their protection relays and associated cables in accordance with. Transnet Freight rail Specification BBB.2721 ver-10)	Sum	1		
2	Supply and install Indoor earthing & DC earth relay with all its cables according to BBB3629,ver.5	Sum	1		
3	Supply and install Outdoor earthing with all its cables in accordance to BBB3629,ver.5	Sum	1		
4	Supply and install various cables (HV cables, LV cables and control cables) from and to indoor and outdoor equipment's.	Sum	1		
5	Design, supply and install clear view fencing with bob wire.2 gates(6mx3m) and repair minor damages on the existing fence inside HT yard (150mx3m).	m	200		
6	Supply and install a 3Kv DC undervoltage relay with a high voltage potential divider in accordance with Transnet Freight Rail Specification BBB 3005	Each	1		
7	Perform soil rehabilitation (20m*10m ,1.5m deep), Supply and install new yard stones (19mm)	Sum	1		
8	Supply and install <b>Main transformer</b> in accordance with Transnet freight rail Specification BB 5019	Sum	1		
9	Supply and install 3kv wall bushings	Each	7		
10	Supply and install Wave filter equipment with its cables and busbars. It must be in accordance with Transnet Freight Rail specification BBB 3139 for capacitor, and Specification BBB 3162 for inductor coil.	Sum	1		


**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.

11	Supply and install flying busbars from secondary side of main traction transformer to auxiliary transformer	Sum	1		
12	Supply and install 3Kv DC high Speed circuit breaker in accordance with specification CEE.0099	Each	3		
13	Supply and install Telecontrol system with its associated control cables and cards in accordance with Transnet specification.	Each	1		
14	Supply and install a 110v Battery charger in accordance with Transnet Freight rail specification 2502 Ver 6. Free standing battery charger	Each	1		
15	Supply and install 3kv Busbar chamber components(3m busbar, 2 lugs, 4 pinpot,voltage divider.)	sum	1		
16	Supply and install positive cable(500mm sq) from positive isolator to 3kv dc busbar	m	120		
17	Supply and install positive isolator	each	1		
18	Supply and install AC/DC distribution panel with all protection relays and associated cables in accordance with Transnet Freight Rail Specification BBB.2721 ver-10	each	1		
19	Supply and install 3Kv DC 5MW Rectifier with its associated control equipment in accordance with Transnet Freight Rail specification BBB 0496	each	1		
20	Supply and install indoor and outdoor building lights,DB wiring,socket and switches	Each	6		
21	Supply and install safety and burglar doors(standard ATM door) in accordance with Transnet freight rail specification BBB 5452 Ver 6(1*double door & 2 single)	sum	1		
22	Dismantle, clean and transport damaged equipment's to Krugersdorp depot	sum	1		
23	Supply and install Hot dipped galvanised steel palisade fence (150mx2m) with 2 gate (6mx2m) in accordance with Transnet Freight Rail specification BBD 9751 and drawing CEE-TDF-0016.	m	156		
24	Supply and install a 53 cell 110v Planté lead acid <b>battery bank</b> . The capacity of the battery should be 100 ampere hour	ea	53		

**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.



25	Clean and paint inside walls and floor as stipulated in BBB5452	sum	1		
26	Supply and install rectifier bay fence(4mx3m) and single gate.	sum	1		
27	Supply and install a complete mechanical interlocking system with a set of its mechanical keys in accordance with Transnet Freight rail specification BBB5452 Ver 6.	sum	1		
28	Supply and fill the Main and Auxiliary transformers with <b>Virgin Transformer Oil, around 15 000 litres</b> in accordance with Transnet specification BBB0937	L	15000		
29	Supply and Install new 1 single HT yard gate(1,8mx1,2m) in accordance with BBB5452.	sum	1		
30	Clean vegetation and spray weed killer around substation	sum	1		
31	Supply and install checker plate, 95mm copper earthing cable under checker plate	sum	1		
32	Provide 24/7 security for the duration of the project	Sum	1		
33	Supply & install window burglars(0,5mx0,5)	sum	8		
34	Supply and install connecting flying aluminium busbar to the wall bushings	sum	7		
35	Supply and install a three phase <b>150kVA, 635/400 V Auxiliary Step down Transformer</b> with its barrier fence, gate and lock in accordance with Transnet Freight rail specification BBB 2721	sum	1		
36	Testing and commissioning	sum	1		
37	Supply and install 1.8 mH 3kV DC air <b>core Reactor</b>	sum	1		
38	P's and G's	sum	1		
<b>A</b>	<b>Total Price=</b>		<b>R</b>		
	<b>VAT (15% of A) =</b>		<b>R</b>		
	<b>Gross Total =</b>		<b>R</b>		

**Transnet Freight Rail**

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Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.



Item	Description	Unit	Qty	Rate	Price
<b>B</b>	<b>STRYDERS 3KV DC TRACTION SUBSTATION</b>				
1	Supply and install a complete mechanical interlocking system with a set of its mechanical keys in accordance with Transnet Freight rail specification BBB5452 Ver 6.	sum	1		
2	Supply and install wall bushings in accordance with BBC1677	sum	7		
3	Supply and install connecting flying aluminium busbar to the wall bushings	sum	7		
4	Supply and install safety and burglar doors(standard ATM door) in accordance with Transnet freight rail specification BBB 5452 Ver 6(1*double door & 2 single)	sum	3		
5	Positive isolator to busbar chamber (positive cables 500 mm <sup>2</sup> in accordance with BBC0198)	m	120		
6	Supply and install 3kv Busbar chamber components(3m busbar, 2 lugs, 4 pinpot,voltage divider.)	sum	1		
7	Supply and install <b>3kV DC Rectifier</b> with its associated control equipment	sum	1		
8	Supply and install <b>3kV DC Positive isolator</b>	sum	1		
9	Supply and install a 110v Battery charger in accordance with Transnet Freight rail specification 2502 Ver 6. Free standing battery charger	sum	1		
10	Supply and install a 3Kv DC undervoltage relay with a high voltage potential divider in accordance with Transnet Freight Rail Specification BBB 3005	sum	1		
11	Supply and install 3*3Kv DC high Speed circuit breaker in accordance with specification CEE.0099	ea	2		
12	Supply and install 5 MVA, 132 000/1220 V, 3phase – 6 phase, DY1 Step down <b>Main</b>	ea	1		

**Transnet Freight Rail**

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	<b>Traction Transformer</b> in accordance with Transnet freight rail specification BBB 5019				
13	Install secondary Lighting Arrestor	sum	1		
14	Supply and install a three phase <b>150kVA, 635/400 V Auxiliary Step down Transformer</b> with its barrier fence, gate and lock in accordance with Transnet Freight rail specification BBB 2721	ea	1		
15	Supply and fill the Main and Auxiliary transformers with <b>Virgin Transformer Oil, around 15 000 litres</b> in accordance with Transnet specification BBB0937	L	15 000		
16	Supply and install Indoor earthing with all its cables according to BBB3629,ver.5	Sum	1		
17	Supply and install 3Kv DC earth leakage relay in accordance with Transnet Freight Rail specification BBB 2721 and drawing CEE-TBD-0007.	sum	1		
18	Supply and install Telecontrol system with its associated control cables and cards in accordance with Transnet specification.	sum	1		
19	Supply and install indoor and outdoor building lights,DB wiring,socket and switches	sum	6		
20	Design, supply and install clear view fencing with bob wire.2 gates(6mx3m) and repair minor damages on the existing fence inside HT yard (150mx3m).	m	156		
21	Supply and install checker plate, 95mm copper earthing cable under checker plate	sum	1		
22	Supply and install a 53 cell 110v Planté lead acid <b>battery bank</b> . The capacity of the battery should be 100 ampere hour	set	53		
23	Clean and paint inside walls and floor as stipulated in BBB5452	sum	1		
24	Supply and install 1.8 mH 3kV DC air <b>core Reactor</b>	ea	1		
25	Supply and install <b>Wave filter equipment</b> with its cables and busbars.It must be in accordance with Transnet Freight Rail specification BBB 3139 for capacitor, and Specification BBB 3162 for inductor coil	sum	1		

**Transnet Freight Rail**

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maldi Substation.



26	Perform soil rehabilitation (20m*10m ,1.5m deep), Supply and install new yard stones (19mm)	sum	1		
27	Supply and install rectifier bay fence(4mx3m) and single gate.	sum	1		
28	Supply and Install Primary Circuit Breaker control panel in accordance with BBB2721	sum	1		
29	Replace broken windows and supply & install window burglars(0,5mx0,5)	sum	8		
30	Supply and install Hot dipped galvanised steel palisade fence(150mx2m) with 2 gate(6mx2m) in accordance with Transnet Freight Rail specification BBD 9751 and drawing CEE-TDF-0016.	m	156		
31	Supply and install safety and burglar doors(standard ATM door) in accordance with Transnet freight rail specification BBB 5452 Ver 6(1*double door & 2 single)	sum	3		
32	Supply and install AC/DC distribution panel with all protection relays and associated cables in accordance with Transnet Freight Rail Specification BBB.2721 ver-10	sum	1		
33	Supply and Install new 1 single HT yard gate(1,8mx1,2m) in accordance with BBB5452.	sum	1		
34	Clean vegetation and spray weed killer around substation	sum	1		
35	Dismantle, clean and transport damaged Equipment's to Krugersdorp depot	sum	1		
35	Provide 24/7 security for the duration of the project	sum	1		
37	Testing & Commissioning	sum	1		
	<b>Gross Total (excl VAT)</b>			R	
	<b>VAT (15%)</b>			R	
	<b>Gross Total (incl VAT)</b>			R	

A & B	<b>GRAND TOTAL (excluding VAT)</b>	R
	<b>15% (VAT)</b>	R
A & B	<b>GRAND TOTAL (including VAT)</b>	R

Tender Number: CRAC\_ELF\_45981

Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maidi Substation.

**PART C3: SCOPE OF WORK**

<b>Document reference</b>	<b>Title</b>	<b>No of page</b>
C3.1	This cover page	1
	<i>Employer's Works Information</i>	22
<b>Total number of pages</b>		<b>23</b>

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Description of the Works: Supply, Installation, Testing and Commissioning of 3KV DC Traction Substation Equipment at Stryder and Maidi Substation.

### **C3.1 EMPLOYER’S WORKS INFORMATION**

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## **SECTION 1**

### **1 Description of the *works***

#### **1.1 Executive overview**

- 1.1.1 The works that the Contractor is to perform involve supply, installation, testing and commissioning of 3KV DC Traction Substation Equipment's at Maidi, and Stryders Traction Substations.
- 1.1.2 Implementation requirements will differ from site to site, depending on the scope of required service per site. However, adherence to the projects technical specification is mandatory

#### **1.2 Employer's objectives**

The objective is to reinstate these 3 traction substations back onload. Minimise the use of copper by using more aluminium where possible and improve the security features of the substations.

#### **1.3 Interpretation and terminology**

The following abbreviations are used in this Works Information:

<b>Abbreviation</b>	<b>Meaning given to the abbreviation</b>
AIA	Authorised Inspection Authority
BBBEE	Broad Based Black Economic Empowerment
CEMP	Construction Environmental Management Plan
CD	Compact Disc
CDR	Contractor Documentation Register
CDS	Contractor Documentation Schedule
CRL	Contractor Review Label
CSHEO	Contractor's Safety, Health and Environmental Officer
CM	Construction Manager
DTI	Department of Trade and Industry
DGN	.....
DWG	Drawings
EDMS	.....
EO	Environmental Officer
HAW	Hazard Assessment Workshop
HAZOP	Hazard and Operability Study
HSSP	Health and Safety Surveillance Plan
INC	Independent Nominated Consultant
IP	Industrial Participation
IR	Industrial Relations
IPP	Industrial Participation Policy
IPO	Industrial Participation Obligation
IPS	Industrial Participation Secretariat
IRCC	Industrial Relations Co-ordinating Committee
JSA	Job Safety Analysis
CIRP	Contractor's Industrial Relations Practitioner
Native	Original electronic file format of documentation

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PES	Project Environmental Specifications
PHA	Preliminary Hazard Assessment
PIRM	Project Industrial Relations Manager
PIRPMP	Project Industrial Relations Policy and Management Plan
PLA	Project Labour Agreements
PSIRM	Project Site Industrial Relations Manager
PSPM	Project Safety Program Manager
PSSM	Project Site Safety Manager
ProgEM	Programme Environmental Manager
ProjEM	Project Environmental Manager
QA	Quality Assurance
R&D	Research and Development
SANS	South African National Standards
SASRIA	South African Special Risks Insurance Association
SES	Standard Environmental Specification
SHE	Safety, Health and Environment
SHEC	Safety, Health and Environment Co-ordinator
SIP	Site Induction Programme
SMP	Safety Management Plan
SSRC	Site Safety Review Committee

## 2 Engineering and the *Contractor's* design

### 2.1 *Employer's* design

- 2.1.1 The *Employer's* designs are already contained in relevant Transnet specifications
- 2.1.2 The *Employer* grants the *Contractor* a licence to use the copyright in design data presented to the *Contractor* for the purpose of the *works* (and the *Contractor's* obligation under paragraph 2.2 of the *Employer's Works Information*) ONLY.

### 2.2 Parts of the *works* which the *Contractor* is to design

- 2.2.1 The *Contractor* is to design the following parts of the *works*:
- Outdoor yard equipment and indoor substation equipment's as specified in relevant Transnet specifications
- 2.2.2 The *Contractor* is responsible in his design for the overall integration of the design of the *works* with the design of the *Employer*
- 2.2.3 Unless expressly stated to form part of the design responsibility of the *Employer* as stated under 2.1 *Employer's* design above and whether or not specifically stated to form part of the design responsibility of the *Contractor* under this paragraph 2.2, all residual design responsibility and overall responsibility for the total design solution for the *works* rests with the *Contractor*.

### 2.3 Procedure for submission and acceptance of *Contractor's* design

- 2.3.1 The *Contractor* must submit all designs to the Project Manager and to TFR Technical Office (JHB) for approval prior to any construction taking place.
- 2.3.2 The *Contractor* undertakes design safety reviews [TCP-HAS-STD-001] with the Project Manager and his representatives.
- 2.3.3 Documentation Submission

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In undertaking the 'Works' (including all incidental services required), the Supplier shall conform and adhere to the requirements of the 'Contractor Document Submittal Requirements' Standard included in Annexure 1 (Refer to BBB 2721).

## **2.4 Review and Acceptance of *Contractor* Documentation**

The *Contractor* submits documentation as the 'Works Information' requires to the *Project Manager* for review and acceptance.

In undertaking the 'Works' (including all incidental services required), the Supplier shall conform and adhere to the requirements of the 'Contractor Document Submittal Requirements' Standard included in Annexure 1 (Refer BBB 2721).

## **2.5 Other requirements of the *Contractor's* design**

N/A

## **2.6 Use of *Contractor's* design**

2.6.1 The *Contractor* grants the *Employer* a licence to use the copyright in all design data presented to the *Employer* in relation to the *works* for any purpose in connection with the construction, reconstruction, refurbishment, repair, maintenance and extension of the *works* with such licence being capable of transfer to any third party without the consent of the *Contractor*.

2.6.2 The *Contractor* vests in the *Employer* full title guarantee in the intellectual property and copyright in the design data created in relation to the *works*.

## **2.7 Design of Equipment**

2.7.1 The *Contractor* submits his design details of his proposed principal Equipment to the *Project Manager* for his information only:

## **2.8 Equipment required to be included in the *works***

2.8.1 Various indoor and outdoor traction substation equipment's

## **2.9 As-built drawings, operating manuals and maintenance schedules**

### **2.9.1 As-Built/Final Documentation**

In undertaking the 'Works' (including all incidental services required), the Supplier shall conform and adhere to the requirements of the 'Contractor Document Submittal Requirements' Standard included in technical specifications.

### **2.9.2 Installation, Maintenance and Operating Manuals and Data Books**

In undertaking the 'Works' (including all incidental services required), the Supplier shall conform and adhere to the requirements of the 'Data Books and Manuals' Standard included in Annexure 10 (Refer BBB 5452) and the 'Contractor Documentation Submittal Requirements' Standard included in Annexure 1 (Refer to BBB 5452).

## **3 Construction**

- A. Strip out the existing indoor electrical equipment and associated cables and busbar. Transport and deliver to the Infrastructure Maintenance Depot in Millsite, Krugersdorp.
- B. Supply, install and commission new indoor electrical equipment in accordance with Transnet specification BBB 5452. The panels shall also cater for:

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- DC earth leakage relay in polycarbon box outside the panel
  - Auxiliary isolating short-circuiting switch.
  - Protection relay for main and auxiliary transformers and AC earth leakage protection. The currently approved relay is FP 2005/2T
  - 5-pin 63A male/female socket outlet for calibration.
  - 220V AC and 110V DC light.
- C. Supply and install one (1) freestanding 110Volt battery charger in accordance with Specification no. BBB 2502 (Version 6)
- D. Install, all equipment in accordance with Transnet specification BBB 5452 version-5 Only equipment approved by Transnet shall be accepted.
- E. All installations shall include the necessary required insulators, bolts and fasteners.
- F. Works should include supply and installation of safety doors, single and double safety doors.
- G. All copper connections to steel (galvanised) shall be tinned or silver coated and connection grease shall be used.
- H. Nuts and bolts on busbar connections shall be stainless steel.
- I. If necessary, where old equipment is removed, modified or new equipment installed, the rectifier bay fence must be suitably modified to close off the rectifier HT bay. If circumstances require replacement of the existing fence, the Contractor shall supply and install a new HT fencing similar to the existing fence.
- J. Supply cables in accordance with Transnet specification BBC 0198 version-1.
- K. All cabling shall be clearly marked with high quality permanent markers. Sticker marking numbers on cables will not be accepted.
- L. The following cables shall be supplied and installed:
- 110V DC supply cable (16mm<sup>2</sup> x 2 core) from control panel to all the high-speed circuit breakers.
  - 110V DC cable (16mm<sup>2</sup> x 2 core) from the battery bank to the panel.

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- Control cable (2.5mm<sup>2</sup> x 12 core) from control panel to all the high speed circuit breakers.
- Control and protection cables to the control panel from the AC disconnects (2.5mm<sup>2</sup> x 4 core), CT's (4mm<sup>2</sup> x 4 core), PCB (2.5mm<sup>2</sup> x 19 core and 2.5mm<sup>2</sup> x 2 core for heater), transformer (2.5mm<sup>2</sup> x 4 core)
- Wiring cables and DB panel for lights, plugs and switches
- Auxiliary transformer (25mm<sup>2</sup> x 4 core)
- Multi core cable (1.5mm<sup>2</sup> x 40 core) from control panel to Tele-control.
- Ensure that painting of steel components of electrical equipment is in accordance with Transnet specification CEE.0045-2001/2.
- Ensure that all steelwork is galvanised in accordance with SANS 121.
- Ensure that all concrete work (i.e. casting of plinths and foundations) is in accordance with Transnet specification S420 (1999)
- Patch up walls and floors where the old equipment has been removed.
- On completion of the installation the Contractor shall submit as build drawings and schematic diagrams of all new equipment, indicating interfaces with existing equipment.

### **OUTDOOR WORK**

- Strip out and dismantle the existing main high voltage outdoor equipment, and transport to the Infrastructure Maintenance Depot in Millsite, Krugersdorp.
- Supply and install outdoor equipment in accordance with Transnet specification BBB 2721 ver 10.
- All fasteners (nuts & bolts) shall be secured using flat or bevelled washers as necessary, as well as lock washers.
- All steelwork shall be galvanised in accordance with SANS 121, CEE 0183 and where required, painted in accordance with specification CEE 0045.
- Cables and earthing conductors connected to the equipment installed on steel support structures shall be supported to the structure by means of a cable tray.

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- When doing trenching in the substation outdoor yard for laying cables, the ballast stone shall be removed, soil shall be properly compacted back and the ballast cleaned and placed back neatly.
- Joints in cables and busbars will not be accepted.
- Junction boxes underground, shall not be used.
- All equipment, tools, material, cleaning agents etc. for execution of the work done in the substation outdoor yard shall be provided by the Contractor.
- Upon completion of the work, the Contractor shall submit as-build drawings, diagrams, catalogues and manuals.

## **OUTDOOR EARTHING**

- Conduct and record earth resistivity measurements. Design a suitable earth system for the specific location in accordance with specification no. BBB 3059 and drawing no. BBB 3620.
- Remove the necessary crusher stone before excavation commences.
- Excavate trenches for the interconnecting conductors between structures and the earthing system.
- Supply and install earth spikes, interconnecting conductors, bonding cables and connections between the various structures. This shall include connections to all steel structures, screens, fences and the substation main earth spike/mat.
- All electrical equipment shall be connected as prescribed by Specification no. BBB 3059 (Ver 1), section 8.0 and drawing no. BBB 3620.
- Close up trenches, compact refill material and restore the crusher stone to its original condition
- The installed earth system at each substation shall be tested for compliance with the requirements of specification BBB 3059. Transnet Freight Rail's representative shall witness tests.

## **DESIGN OF THE OUTDOOR EARTH SYSTEM**

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- The successful tenderer shall conduct tests, measuring the average resistivity of the soil condition for every substation outdoor yard. (This survey shall form part of the work scope and costs incurred must be included in the tendered amount per substation).
- Drawing no. BBB 3620 (Ver4) shall be used as a guideline for designing the earthing systems at every substation. The contractor shall submit his design to the Maintenance Manager prior to any physical work commences at the substations.
- Thus, cognisance shall be taken of the earth resistivity at the individual substations, the local conditions, size and configuration of substation yards when designing the earth system.

## **TRENCHING**

- Before any trenching commences, the contractor shall consult with Transnet Freight Rail staff for supervision and approval of the routing of the trenches in the outdoor yard.
- The contractor shall ensure that the crusher stone is not contaminated during excavations.
- The depth of the trenches shall be a minimum of 700mm.
- The design/s of the earthing system at the substation and tendered prices shall allow for and include excavation in soil.
- Should excavation be done in soft or hard rock, such excavation will be paid for at the relevant rates in Appendix 2 of Specification no. CEE.0023-ISS-2012.

**Notes:** Soft rock will be taken as broken or friable rock which can be removed by pick or mechanical excavator, or paving breaker. Hard rock will be taken as rock which cannot be removed by mechanical excavator and requires drilling and blasting or splitting. This includes reinforced or plain concrete.

- The contractor and Transnet Freight Rail staff shall inspect the trenches before being backfilled.
- Care should be taken not to damage existing cables and services during trenching.
- All materials to be used shall be in accordance with Specification no BBB 3059 Ver 1.

## **MECHANICAL INTERLOCKING DEVICES**

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- Supply and install two (2) complete sets of interlocking mechanisms (similar to existing installation) of the key exchange type, which must include the AC disconnects, positive isolator, auxiliary transformer short out links to the HT bay gate in the correct sequence in accordance with the specification BBB 5452 version-5.

## **EARTHING AND CHEQUER PLATES**

- The Contractor shall re-do / repair earthing in every substation equipment in accordance with the drawing no. CEE-TBD-7
- The crimping lugs of the interconnection cables shall be correspondingly marked with the busbar as shown on drawing no. CEE-TBD-7.
- Only hexagon crimps will be accepted on all crimping lugs.
- Resistance between the DC earth leakage busbar and the substation earth matt shall not be less than 25 Ohms.
- All exposed cable trenches shall be covered with chequer plates resting on a frame 3 mm below the floor level.
- Should any modification or addition to the chequer plates be necessary, it shall have a thickness of 3 mm and shall be earthed to the DC earth leakage system.
- Contractor shall use welded bolts on the chequer plates with crimping lugs of 95 mm<sup>2</sup> welding cable to connect the chequer plates to the DC earth leakage system.
- The Contractor shall connect all existing checker plates as well as existing equipment (all indoor steelwork) to the DC earth leakage system

## **INSTALLATION**

- The Contractor shall be responsible for the transport to site, off-loading, handling, storage and security of all material required for the construction/execution of the works. The Contractor shall arrange own security for the duration of the installation until commissioning of the substation.
- All fasteners on steelwork, components and electrical connections (nuts and bolts) shall be secured using flat as well as lock washers.

## **INTERCONNECTION OF EQUIPMENT**

- High conductive silicon grease shall be liberally applied to all the connections.
- All dissimilar metal connections (Cu to Al) shall be made using bi-metallic clamps that are specifically designed and manufactured to make that particular connection (ad hoc fabricated clamps are not acceptable).
- Conductors between separately mounted outdoor equipment shall incorporate a degree of flexibility to avoid over-stressing of the connections.

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- All HT electrical equipment interconnections shall be done using conductors similar to that being used in the existing installation.

#### **WORK TO BE DONE BY TRANSNET.**

- Transnet shall have an electrician available for arranging work permits, isolation of electrical equipment, erection of barriers to live electrical equipment and supervision.
- Upon completion of the works and to the satisfaction of Transnet, the required protection tests and commissioning of the equipment shall be performed by Transnet.
- Transnet personnel shall verify the correctness of the wiring to the tele-control equipment in the substation.

#### **INSPECTION AND HANDOVER**

- The contractor shall arrange and conduct on site tests. The Transnet Freight Rail supervisor or His designate shall be present to witness such tests.
- The contractor shall issue test certificates for every installation successfully completed, indicating the date of testing, number of rods installed, length earth conductor installed and test results obtained.
- Transnet Freight Rail shall conduct inspections on completed installations and a defect list shall be completed.
- All defects noted at the inspections mentioned shall be rectified within 14 (fourteen) days from the date of inspection.
- Transnet Freight Rail reserves the right to withdraw the handover certificate should the Contractor fail to correct the defects mentioned, to the satisfaction of the Contract Supervisor.

### **3.1 Completion, testing, commissioning and correction of Defects**

- 3.1.1 The *work* to be completed on or before the Completion Date the Contractor shall have done everything required to provide the Works and in any case before the date stated. The Project Manager cannot certify Completion until all the work listed above has been done and is also free of Defects, which would have, in his opinion, prevented the Employer from using the works and Others from doing their work.
- 3.1.2 The *Contractor* is permitted to carry out the following *works* after Completion: Minor Defects that does not prevent the normal operation of the substation.
- 3.1.3 The *Contractor* ensures that the documentation as described under paragraph 3.8 of the *Works Information* is presented to the *Project Manager* before Completion.
- 3.1.4 The *Contractor* ensures that the *Project Manager* has a full and accurate dossier of As-built documents that represent the state combination of Mechanical, Electrical, General Layout as appropriate status of the completed *works* (to include Plant within the *works*) to present to the *Employer*.

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- 3.1.5 The *Contractor* ensures that the *Project Manager* has a full and accurate dossier of state Maintenance and Operating Manuals as appropriate at the earlier of take-over or Completion.
- 3.1.6 Where the *Contractor* has presented state Maintenance and Operating Manuals as appropriate to the *Project Manager* at take-over, the *Contractor* modifies and updates As-built documents as necessary prior to Completion.
- 3.1.7 Access given by the *Employer* for correction of Defects

## 4 Plant and Materials Standards and Workmanship

### 4.1 Investigation, Survey and Site Clearance

- 4.1.1 During the site briefing session, the Contractor is to conduct all necessary investigation regarding the Service.
- 4.1.2 This investigation might not be sufficient, and *Contractor* might want to carry out further investigation of the site before submitting the offer or design. For this, arrangements can be made with the Project Manager for further site visits.

### 4.2 Building works

- 4.2.1 Where the Association of South African Quantity Surveyors Model Preamble for Trades 1999 are used within the Works Information, the following interpretations and meanings shall apply:
- 4.2.2 In case of any conflict in interpretation, ambiguity or discrepancy between any Model Preamble for Trades 1999 (whether standard or written as a particular project specification) contained in the Works Information and the *conditions of contract*, the *conditions of contract* take precedence within the ECC Contract.
- 4.2.3 In case of any conflict in interpretation, ambiguity or discrepancy between any Model Preamble for Trades 1999 (whether standard or written as a particular project specification) contained in this paragraph 4.2 of C3.1 *Employer's Works Information* and specific statements contained elsewhere in C3.1 *Employer's Works Information*, the specific statements contained elsewhere shall prevail, without prejudice to the *Project Manager's* express duty to resolve any ambiguity or inconsistency in the Works Information under ECC Clause 17.1.
- 4.2.4 Within the Model Preambles for Trades 1999, the following amendments and interpretations shall apply:
  - Where the word or expression "Principal Agent" is used, read "*Project Manager*" or "*Supervisor*" as the context requires.
  - Where the word or expression "*Contractor*" is used, read "*Contractor*".
  - Where the word or expression "Engineer" is used, read "*Project Manager*" or "*Supervisor*" as the context requires.
  - Where the Model Preambles for Trades 1999 mention "rates" for measured work and any contractual statements relating to payment, all such statements shall be discounted, with the ECC *conditions of contract* taking precedence.
- 4.2.5 Within the Model Preambles for Trades 1999, A. GENERAL, the following amendments and interpretations shall apply:
  - Where the word or expression "bills of quantities" is used, this shall be discounted for the purposes of the Works Information. The ECC Contract Data - Part One states the main option to apply within the ECC Contract between the Parties.
- 4.2.6 Within the Model Preambles for Trades 1999, B. ALTERATIONS, B.2 MATERIALS FROM THE ALTERATIONS, CREDIT, ETC and C. EARTHWORKS, C1.4 Materials from demolitions shall not apply. C3.1 *Employer's Works Information* paragraph 3.1.6 states details of the *Contractor's* title (if any) to Materials arising from excavations and/or demolitions and how such Materials are either to be disposed of or re-used in the works.

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- 4.2.7 Within the Model Preamble for Trades 1999 Q. PLUMBING AND DRAINAGE, Q.24 TESTS shall be deemed to be included within paragraph 3.2.1 of C3.1 *Employer's Works Information*.
- 4.2.8 Within the Model Preamble for Trades 1999 U. EXTERNAL WORKS, U.3.8 Process control tests shall be deemed to be included within paragraph 3.2.1 of C3.1 *Employer's Works Information*.
- 4.2.9 The principles, meanings and interpretation stated and established within paragraphs 6.2.1 to 6.2.8 with respect to the Model Preambles for Trades 1999 equally apply to the other Model Preambles for Trades 1999 references used within this paragraph 4.2 of C3.1 *Employer's Works Information*.

### 4.3 Civil Engineering and Structural Works

- 4.3.1 Where the SANS 1200 series of Specifications are used within the Works Information, the following interpretations and meanings shall apply:
- 4.3.2 In case of any conflict in interpretation, ambiguity or discrepancy between any SANS 1200 Specification (whether standard or written as a particular project specification) contained in the *Works Information* and the conditions of contract, the conditions of contract take precedence within the ECC contract.
- 4.3.3 In case of any conflict in interpretation, ambiguity or discrepancy between any SANS 1200 Specification (whether standard or written as a particular project specification) contained in this paragraph 4.3 of the *Employer's Works Information* and specific statements contained elsewhere in C3.1 *Employer's Works Information*, the specific statements contained elsewhere shall prevail, without prejudice to the Project Manger's express duty to resolve any ambiguity or inconsistency in the *Works Information* under ECC Clause 17.1.
- 4.3.4 Within SANS 1200 A: GENERAL, the following amendments and interpretations shall apply:
  - Where the word or expression "Employer" is used, read "*Employer*";
  - Where the word or expression "Contractor" is used, read "*Contractor*";
  - Where the word or expression "Engineer" is used, read "*Project Manager*" or "Supervisor" as the context requires;
  - Where the word or expression "schedule of quantities" is used, this is deleted in entirety. Assessment and payment is in accordance with the *conditions of contract* (and the ECC main and secondary options stated therein);
- 4.3.5 Within SANS 1200 A: GENERAL 2.3 DEFINITIONS, the following apply:
  - "Acceptable. Approved (Approval)" is interpreted as either a *Project Manager* or a *Supervisor* communication or instruction in relation to Works Information compliance, consistent with the *conditions of contract* as the context requires;
  - "Adequate" is deleted. The *Project Manager* notifies the *Contractor* where the *Contractor* has not complied with the *Works Information*;
  - "Measurement and payment" and the further definitions contained within 6.3 c) are deleted. Assessment and payment is in accordance with the conditions of contract (and the ECC main and secondary options stated therein);
- 4.3.6 Within SANS 1200 A: GENERAL 2.6 APPROVAL, the following applies:
  - "Approval" by either the *Project Manager* and/or the *Supervisor* is without prejudice to ECC Clause 14.1 and, inter alia, ECC Clauses 13.1, 14.3 and 27.1.
- 4.3.7 SANS 1200 A: GENERAL 2.8 ITEMS IN SCHEDULE OF QUANTITIES, is deleted in entirety. Assessment and payment is in accordance with the *conditions of contract* (and the ECC main and secondary options stated therein).
- 4.3.8 SANS 1200 A: GENERAL 3.2 STRUCTURES AND NATURAL MATERIAL ON SITE, applies only to the extent that it is consistent with paragraph 3.1.6 of C3.1 *Employer's Works Information*.
- 4.3.9 Within SANS 1200 A: GENERAL 7.1 PLANT, the following applies:

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Where the word or expression “Plant” is used, read “Equipment”.

- 4.3.10 SANS 1200 A: GENERAL 7.2 *CONTRACTOR’S OFFICES, STORES AND SERVICES*, applies but the *Project Manager* resolves any inconsistency with statements included within paragraph 3.1.12 of C3.1 *Employer’s Works Information*.
- 4.3.11 SANS 1200 A: GENERAL 3.1 SURVEY, applies only to the extent that it is consistent with paragraph 3.1.14 of C3.1 *Employer’s Works Information*.
- 4.3.12 Within SANS 1200 A: GENERAL 3.2 WATCHING, BARRICADING, LIGHTING AND TRAFFIC CROSSINGS, the following applies:  
Where the word or expression “specification” is used, read “Works Information”.
- 4.3.13 SANS 1200 A: GENERAL 3.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES applies only to the extent that it is consistent with the specific statements made elsewhere in C3.1 *Employer’s Works Information* and in any case and at all times consistent with the *conditions of contract*.
- 4.3.14 Within SANS 1200 A: GENERAL 5 TESTING, the following applies:  
Where the word or expression “Engineer” is used, read “*Supervisor*”.
- 4.3.15 SANS 1200 A: GENERAL 8 MEASUREMENT AND PAYMENT, is deleted in entirety. Assessment and payment is in accordance with the conditions of contract (and the ECC main and secondary options stated therein).
- 4.3.16 The principles, meanings and interpretation stated and established within paragraphs 6.3.1 to 6.3.15 with respect to SANS 1200 series and to SANS 1200 A: GENERAL equally apply to the other SANS 1200 specification references [state particulars of SANS 1200 used ] used within this paragraph 6.3 of C3.1 *Employer’s Works Information*.

**4.4 Electrical & mechanical engineering works**

- 4.4.1 Where SANS 10142 and/or SANS 10198 specifications are used within the Works Information, then where the term “Equipment” (or the like) is used with the meaning of installation and items left behind in the *works*, then please read this term as “Plant” for ECC defined term compliance.
- 4.4.2 The electrical works involve various indoor and outdoor 3kv DC traction substation equipment’s

**5 List Of Drawings**

**5.1 Drawings issued by the *Employer***

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

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

Drawing number	Revision	Title
BBB 5452	1	3 kV DC Traction Substation Equipment’s

**SECTION 2**

**6 Management and start up**

**6.1 Management meetings**

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

<b>Title and purpose</b>	<b>Approximate time &amp; interval</b>	<b>Location</b>	<b>Attendance by:</b>
Risk register and compensation events	Weekly	On Site / Project Managers Office	Project Manager (and appropriate delegates), Supervisor (as necessary and appropriate delegates) and Contractor (appropriate key persons)
Overall contract progress and feedback	Weekly	On Site / Project Managers Office	Employer, Contractor (appropriate key persons), Supervisor (as necessary and appropriate delegates), 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.

## 6.2 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.

## 6.3 Safety risk management

- 6.3.1 The *Contractor* complies with the following SMP: Site cardinal rules, Project site induction, Hazard management on site, Risk assessment, Daily safe task instructions, Occupational health and hygiene, Safe systems of work, Incident management, Site management (as a minimum)
- 6.3.2 The *Contractor* ensures that its Subcontractors comply with the requirements of the SMP.
- 6.3.3 The *Contractor* performs the *works* having due regard to the HSSP.
- 6.3.4 The *Contractor* in the performance of the *works* establishes an incentive programme for its employees with respect to SMP compliance.
- 6.3.5 The *Contractor* complies with the requirements of the SSRC with respect to his own activities and others on the Site and Working Areas.
- 6.3.6 The *Contractor* makes the SMP available to its employees and Subcontractors in the *language of this contract* and other local languages as required.
- 6.3.7 The *Contractor* participates in a HAZOP at intervals upon the instruction and direction of the *Project Manager*.
- 6.3.8 The *Contractor* completes a JSA prior to carrying out any operation on the Site and/or Working Area to the approval of the Project Manager
- 6.3.9 The lines of communication of the various personnel acting on behalf of the *Project Manager* who communicate directly with the *Contractor* and his key persons with respect to the SMP are contained within the *Annexure*.
- 6.3.10 The roles and responsibilities of the various personnel acting on behalf of the *Project Manager* with respect to the SMP and health and safety issues are as stated in the paragraphs.

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6.3.11 The CM is responsible (in the context of the SMP only) for health and safety on the Site and Working Areas and reports to the *Project Manager*.

## 6.4 Environmental constraints and management

6.4.1 The *Contractor* complies with the following ENV-STD-001 Rev01 (CEMP):

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.

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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 commence 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.

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 has been issued by the SHEC and signed off by the *Project Manager*.

The Contractor complies with environmental inspections and audits as contained within Annexure ENV-STD-001 Rev01.

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.

6.4.2 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.

6.4.3 The *Contractor* must comply with the PES, CEMP and SES. The Contractor abides by the instructions of the Project Manager regarding the implementation of the CEMP.

6.4.4 The lines of communication of the various personnel acting on behalf of the *Project Manager* who communicate to the *Contractor* and his keys persons with respect to the CEMP are contained within Annexure.

6.4.5 The roles and responsibilities of the various personnel acting on behalf of the *Project Manager* with respect to environmental issues are stated in the paragraphs following.

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6.4.6 The ProjEM is responsible for ensuring that the *Contractor* complies with the CEMP. The ProjEM acts on behalf of the *Project Manager*.

6.4.7 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.

## 6.5 Quality assurance requirements

6.5.1 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*).

6.5.2 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

6.5.3 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.

6.5.4 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*.

6.5.5 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*.

## 6.6 Programming constraints

6.6.1 The *Contractor* shows on each programme he submits to the *Project Manager*, the requirements of the CEMP, SES, PES and SMP as described under paragraph 2.4 of the *Works Information*, together with the associated environmental method statements.

6.6.2 The *Contractor* shows on each programme he submits to the *Project Manager*, the requirements of Health and Safety issues, design issues, construction operations and procurement issues.

6.6.3 The *Contractor* complies with the *Employer's* programme when he submits his first programme.

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

6.6.5 The *Contractor* uses Microsoft Project for his programme submissions or a similar programme software package equivalent to Microsoft Project subject to the prior written notification and acceptance by the *Project Manager*.

6.6.6 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.

6.6.7 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].

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

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6.6.9 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.

## **6.7 Contractor's management, supervision and key people**

6.7.1 The *Contractor* employs a CSHEO as a key person under ECC Clause 24.1

6.7.2 The CSHEO reports to the SHEC on the Site. The CSHEO ensures that the *works* (to include any part thereof) are subject to a prior environmental method statement(s) approved by the Project Manager, CM or SHEO and ensures that the CEMP is implemented by the *Contractor* in a timely and proper manner. The SCHEO provides the *Project Manager* with all environmental method statements.

6.7.3 The CSHEO tasks are:

Daily inspections of the Site and Working Areas.

Monitor compliance with the CEMP (to include the SES and PES) and the environmental method statements submitted to the *Project Manager*.

- Reporting of an environmental incident to the *Project Manager*.
- Attendance at all SHE meetings, toolbox talks and induction programmes.
- Litter control and ensuring the *Contractor* clears litter from the Site and Working Areas; and
- Ensuring that environmental signage and barriers are correctly placed

The CSHEO submits daily checklists to the SHEC.

6.7.4 The *Contractor* employs a CIRP as a key person under ECC Clause 24.1.

6.7.5 The CIRP is based on the Site and ensures that all reports and IR requests are submitted accurately and in a timely manner to the Project Manager, CM, PIRM, PSIRM or SIRM.

6.7.6 The CIRP tasks are:

- Dedicated to human resources, industrial relations and any other *Contractor* employee related function;
- Resolve all human resources and industrial relations matters arising from the *Contractor's* employees;
- Represent the *Contractor* at all industrial relations meetings [state specific details within paragraph 6.1 management meetings of the *Works* Information];
- Represent the *Contractor* on the IRCC.

6.7.7 The *Contractor* employs an HSR as a *key person* under ECC Clause 24.1

## **6.8 Training workshops and technology transfer**

6.8.1 The *Contractor* arranges for the following technology transfer to the *Employer*:

- An overview of the full operation of the bundwall should the oil leak occur together with the processes to be followed thereafter.

## **6.9 Insurance provided by the Employer**

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

## **6.10 Contract change management**

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6.10.1 No additional requirements apply to ECC Clause 60 series.

## **6.11 Provision of bonds and guarantees**

6.11.1 The form in which a bond or guarantee required by the conditions of contract (if any) is to be provided by the *Contractor* is given in Part 1 Agreements and Contract Data, document C1.3, Sureties.

6.11.2 The *Contractor* provides a bond or guarantee as required by the conditions of contract concurrently with the execution by the Parties of the form of agreement for the ECC contract.

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

6.12.1 The *Contractor* keeps the following records available for the *Project Manager* to inspect:  
Records of design employees location of work (if appropriate)

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

- Records of design employees location of work (if appropriate);
- Records of Equipment used and people employed outside the Working Areas (if applicable).

## **6.13 The Contractor's Invoices**

6.13.1 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.

6.13.2 The invoice must correspond to the *Project Manager's* assessment of the amount due to the *Contractor* as stated in the payment certificate.

6.13.3 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.

Purchase Order number

The invoice contains the supporting details.

6.13.4 The invoice is presented either by post or by hand delivery.

6.13.5 Invoices submitted by post are addressed to:

Transnet SOC Ltd  
P O Box 8621

Johannesburg

2000

For the attention of Central Accounting

A copy of the Invoice must also be submitted to the Project Manager either by email or by hand.

The invoice is presented as an original.

6.13.6 The invoice is presented either by post or by hand delivery.

## **6.14 People**

6.14.1 Minimum requirements of people employed on the Site.

Safety File approved by Transnet safety officers.

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People on site must have a valid medical certificate and they must appear on the organogram on the safety file.

Attend the compulsory Transnet Freight Rail safety induction.

Have all appropriate Personal Protective Equipment (PPE)

#### 6.14.2 The *Contractor* complies with the following PIRPMP

- 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

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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.

6.14.3 The *Contractor* complies with the requirements of the IRCC involving the engineering construction *Contractors* engaged (including all future *Contractors*) by the *Employer*.

6.14.4 The roles and responsibilities of the various personnel acting on behalf of the *Project Manager* with respect to IR issues are stated in the paragraphs following:

The PIRM is responsible for ensuring that the Contractor complies with the PIRPMP. The PIRM acts on behalf of the *Project Manager*.

6.14.5 The PIRM specific tasks are:

- To complete the PLA prior to the Contract Date; and
- To assign specific duties to the PSIRM.

6.14.6 The SIRM is responsible, *inter alia*, for day-to-day IR on the Site and Working Areas through the implementation of the PIRPMP. The SIRM reports directly to the PSIRM and the *Project Manager*.

6.14.7 The SIRM specific tasks are:

- To liaise with the Contractor prior to the commencement of construction activities (as per the Contractor's programme accepted by the Project Manager) with respect to IR issues under the SIP.

## 6.15 Plant and Materials

6.15.1 The *Contractor* provides Plant and Materials for inclusion in the *works* in accordance with SANS 1200A sub-paragraph 2.1, unless otherwise stated elsewhere in the *Works Information* provided by the *Employer*. All Plant and Materials are new, unless the use of old or refurbished goods and/or Materials are expressly permitted as stated elsewhere in this *Works Information* or as may be subsequently instructed by the *Project Manager*.

6.15.2 Where Plant and Materials for inclusion in the *works* originate from outside the Republic of South Africa, all such Plant and Materials are new and of merchantable quality, to a recognised national standard, with all proprietary products installed to manufacturers' instructions.

6.15.3 The *Contractor* replaces any Plant and Materials subject to breakages (whether in the Working Areas or not) or any Plant and Materials not conforming to standards or specifications stated and notifies the *Project Manager* and the *Supervisor* on each occasion where replacement is required.

6.15.4 The *Contractor* provides all Plant and Materials necessary for the *works*. The Employer will not be providing any "free issue" Plant and Materials.

## 6.16 Tests and inspections before delivery

6.16.1 The *Contractor* submits to the Supervisor details to certify that tests and inspections have been carried out on Plant and Materials by others which include:

- AIA and INC

## **PART C 4: SITE INFORMATION**

Core clause 11.2(16) states

“Site Information is information which

- describes the Site and its surroundings and
- 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 Site Information.

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

#### **1.1. General description**

The contract area is owned, or maintained, by Transnet Freight Rail. The Contractor may be required to work in areas where varying degrees and types of security situations are prevailing such as may occur in remote rural areas through to densely populated metropolitan areas. The railway tracks are located in areas of varying horizontal and vertical dimensions of the land surface. In some areas, tracks fall in deep cuttings as well as in high embankments.

#### **1.2. 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.

#### **1.3. 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 through a baseline risk assessment of any possibilities in anticipation.

**Transnet Freight Rail**

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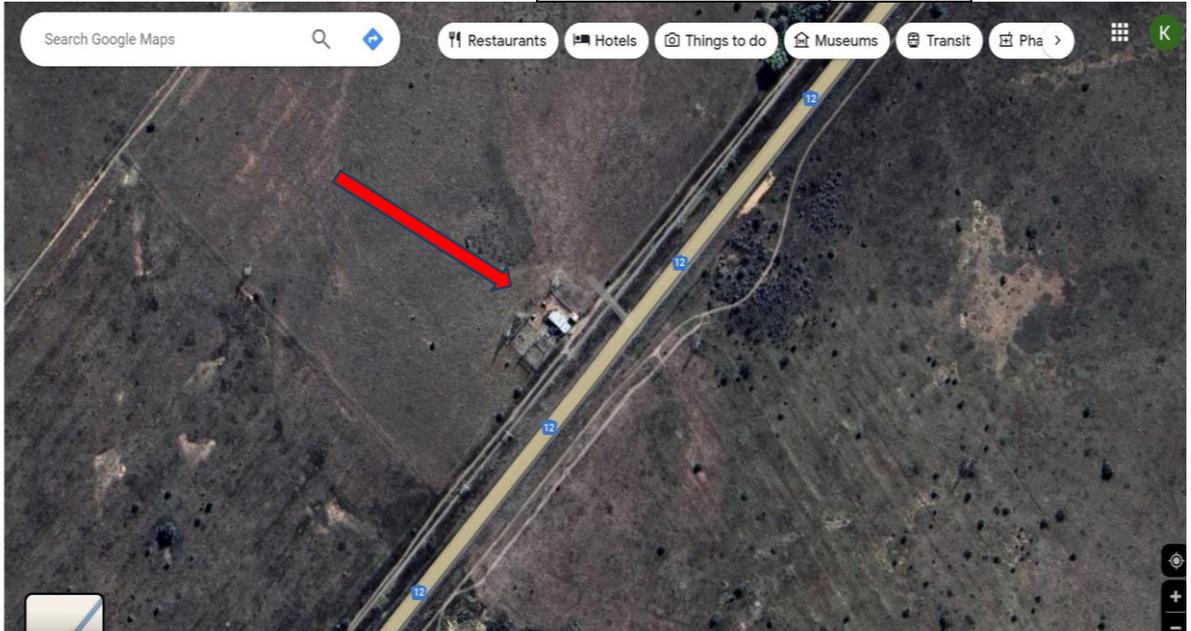


**1.4. Other reports and publicly available information**

**NB: Site briefing will first start at Klersdorp transnet depot (-26.870342 26.669356) for presentation then will proceed to sites /substations**

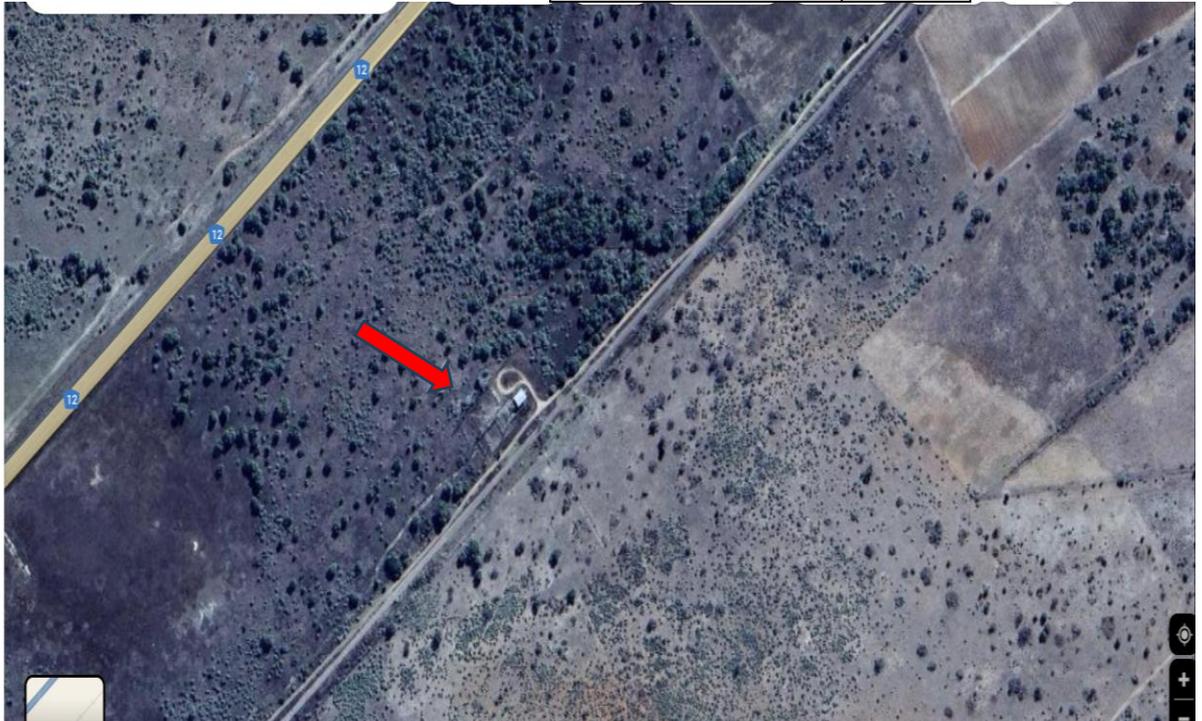
GPS coordinate for Stryders substation

-27.5839071 25.66374



GPS coordinate for Maldi substation

-27.71848253 25.3821





A Division of Transnet SOC Limited

# TECHNOLOGY MANAGEMENT

## SPECIFICATION

### TRANSNET FREIGHT RAIL'S REQUIREMENTS FOR THE INSTALLATION OF ELECTRICAL EQUIPMENT FOR 3kV DC TRACTION SUBSTATIONS

Author	Chief Engineering Technician Technology Management	B.L. Ngobeni
Approved:	Senior Engineer Technology Management	L.O. Borchard
Authorised:	Principal Engineer Technology Management	S.E. Sibande

Three handwritten signatures in black ink, each followed by a dotted line indicating the signature line.

Date: 02 August 2016

Circulation Restricted To:

Transnet Freight Rail – Chief Engineer Infrastructure  
- Technology Management

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**SECTION 1: SUBSTATION DESIGN INFORMATION**
**1.0 SCOPE**

- 1.1 This specification covers Transnet Freight Rail's requirements for the installation of electrical equipment in 3kV DC traction substations.
- 1.2 This specification should be read with the Scope of Work specification for each site/project and the applicable equipment specifications.
- 1.3 This specification also covers the requirements for the supply of security fencing, preparation of the High Voltage (HV) outdoor yard and the erection of all structural steelwork.

**2.0 STANDARDS, PUBLICATIONS AND DRAWINGS**

Unless otherwise specified this specification must be read in conjunction with the current edition of the relevant SANS, and Transnet Freight Rail's specifications.

**2.1 SOUTH AFRICAN NATIONAL STANDARDS (SANS)**

SANS 121:	Hot dip galvanized coatings for fabricated iron or steel articles. Specifications and test methods.
SANS 156:	Moulded-case Circuit Breakers.
SANS 780:	Distribution Transformers.
SANS 1019:	Standard voltages, currents and insulation levels for electricity supply.
SANS 1091:	National Colour Standard.
SANS 1222:	Enclosures for Electrical Equipment.
SANS 1339:	Cross-Linked Polyethylene (XLPE) - Insulated Electric cables for rated voltages (3,8/6,6kV to 19/33kV)
SANS 1431:	Weldable structural steels.
SANS 1507:	Electric cables with extruded solid dielectric insulation for fixed installations. (300/500V to 1900/3,300V) Part 1
SANS 10142-1:	The wiring of premises. Part 1
SANS 61869-2:	Instrument Transformers Part 2. Current Transformers.

**2.2 TRANSNET FREIGHT RAIL SPECIFICATIONS/ ENGINEERING INSTRUCTIONS**

CEE.0023:	Transnet Freight Rail's requirement for the installation of low and medium voltage cables.
CEE.0045:	Painting of steel components of electrical equipment.
CEE.0099:	Specification for 3kV DC high speed circuit breakers for traction substations.
CEE.0227:	The manufacture of 3kV DC breaker cells and trucks.
BBB 0496:	3kV rectifier for traction substations.
BBB 0845:	Requirements for metal oxide surge arresters in accordance with SANS 60099-4.
BBB 1267:	Specification for Outdoor High Voltage Alternating Current Circuit Breaker in Accordance with SANS 62271-100.
BBB 1616:	450 Volt gas arrester spark gap for traction power supplies.
BBB 2502:	Requirements for battery charger for 3kV DC traction substations.

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BBB 2721:	AC primary circuit breaker control panel and AC/DC distribution panel for 3kV traction substation.
BBB 3005:	3kV DC under voltage relay manufacturing specification.
BBB 3139:	Wave filters capacitors for 3kV DC traction substations.
BBB 3162:	Wave filter inductors for 3 kV DC traction substations.
BBB 3890:	Requirements for 1.8 milli Henry DC reactor for 3kV DC traction substations.
BBB4724:	Requirement for positive isolator for 3kV DC traction substations
BBB 5019:	Requirements for traction transformers for 3kV DC traction substations in accordance with SANS 60076
BBB 7842	Outdoor, High Voltage, Alternating Current Disconnectors combined with earthing switch.
BBC 0198:	Requirements for the supply of cables.
BBC 0330:	Isolation transformer.
BBD5994:	Technical Documentation Management Policy.

### 2.3 STATUTORY REQUIREMENTS

Occupational Health and Safety Act and Regulations, Act 85, 1993

### 3.0 TENDERING PROCEDURES

- 3.1 Tenderers shall indicate clause-by-clause compliance with the specification as well as the relevant equipment specifications. This shall take the form of a separate document listing all the specifications clause numbers indicating the individual statement of compliance or non-compliance.
- 3.2 The tenderer shall motivate a statement of non-compliance.
- 3.3 Tenderers shall submit descriptive literature consisting of detailed technical specifications, general constructional details and principal dimensions, together with clear illustrations of the equipment offered.
- 3.4 Failure to comply with clauses 3.1, 3.2, and 3.3 could preclude a tender from consideration.

### 4.0 SERVICE CONDITIONS

The equipment shall be designed and rated for installation and continuous operation under the following conditions:

Altitude:	0 to 1800m above sea level.
Ambient temperature:	-10°C to +55 °C.
Relative humidity:	10% to 90%
Lightning Conditions:	12 ground flashes per square kilometre per annum.
Pollution:	Heavily salt laden or polluted with smoke from industrial sources.

### 5.0 ELECTRICAL SERVICE CONDITIONS

- 5.1 The incoming AC voltage can vary  $\pm 5\%$  of the nominal system r.m.s voltage. Under crippled conditions the supply voltage can drop to as low as minus 15% of the nominal r.m.s voltage.
- 5.2 Frequency of the supply voltage is  $50 \pm 2.5$  Hz.
- 5.3 The AC high voltage system shall be treated as effectively earthed unless otherwise specified.
- 5.4 The traction DC supply voltage is 3,15 kV DC nominal but can vary between 2,4kV and 3,9kV for sustained periods.
- 5.5 The 3kV DC equipment may be subjected to fault currents up to 30kA for 200 milli seconds.

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**6.0 GENERAL REQUIREMENTS**

- 6.1 Equipment/Installations supplied shall be in terms of this specification. Deviations from the specification will not be allowed without the written consent of the Project Manager/Engineer.
- 6.2 Transnet Freight Rail reserves the right to subject material and equipment offered to test or inspection to verify compliance with the clauses of this specification, prior to adjudication or at any stage during manufacture.
- 6.3 The tenderer shall submit the layout drawings of equipment, electrical wiring schematics, and constructional designs to Transnet Freight Rail for design review.
- 6.4 The successful tenderer will be responsible for all costs caused by modifying or replacing equipment accepted by Transnet Freight Rail on the grounds of his statement of compliance and found by Transnet Freight Rail not to comply.
- 6.5 All equipment shall be adequately earthed, insulated, enclosed and interlocked to ensure the safety of staff as well as equipment.
- 6.6 The general design and layout of all equipment shall provide for easy access to all parts.
- 6.7 The equipment shall be installed in such a manner so as to limit fire damage, which may be caused by equipment failure, overheating or flashovers.
- 6.8 The substation control and protection circuits shall be designed and wired according to the fail-safe principle. Control equipment, contactors and relays shall de-energise under fault, power failure or alarm (flag) conditions.
- 6.9 No high voltage cables shall be laid in the same trench or duct as low voltage cables.

**7.0 GENERAL DESIGN OF EQUIPMENT**

- 7.1 This section covers substation equipment with electrical capacities between 3,0 MW and 6,0 MW.
- 7.2 The overload ratings of the rectifier units shall be:
- 2 times full load for thirty minutes.
  - 3 times full load for one minute.
  - 3 ½ times full load for ten seconds.
- 7.3 The substation can either be a single unit or double unit substation. Each unit comprises of one set of high voltage AC switchgear, one rectifier transformer, and one rectifier assembly, connected for 6 or 12 pulse operation and protected by a AC primary circuit breaker.
- 7.4 For a double unit substation each unit shall have the overload rating as specified in clause 7.2.
- 7.5 Each substation unit shall be capable of operating independently to allow for maintenance, fault finding and servicing of the equipment.

**8.0 INSULATION AND CLEARANCES FOR 3kV DC EQUIPMENT**

- 8.1 All indoor equipment, which may be energised at a potential of more than 1,0kV shall be protected by, metal barriers, mesh type screens or panels.
- 8.2 The minimum clearance in air between the rectifier unit and any metal barriers, mesh type screens or panels shall not be less than 450mm.
- 8.3 All exposed electrical equipment and busbars connected between the rectifier transformer secondary and the rectifier cubicle(s), or between the rectifier cubicle(s), positive isolators, DC smoothing equipment or track breakers, which is at a potential above 1,0kV, shall be arranged so that there is a minimum clearance of 2,7 m from the lowest "live" high voltage connections and ground or the floor of the access way, unless suitably screened, or otherwise protected.
- 8.4 All nominal 1,5kV and 3kV insulation to earth shall be designed such that the complete rectifier assembly, when installed on site ready for commissioning, will successfully withstand a test voltage of 10,5kV, 50 Hz AC for one minute.
- 8.5 Where the equipment or subassemblies of the rectifier assembly is enclosed and insulated from the outer framework, the insulation between the equipment and outer framework shall withstand the test voltage of 10,5kV 50 Hz for one minute.

- 8.6 The clearance between the reactor and any metal frame shall not be less 100mm. The reactor must successfully withstand a test voltage of 10,5kV AC 50 Hz for one minute
- 8.7 The successful tenderer shall advise what precautions must be taken before undertaking the withstand insulation level voltage tests to avoid damage to the equipment.
- 8.8 Creepage distance of insulation and the required air clearances shall be as large as possible. The latter shall not be less than:
  - Outdoors: 150mm between the transformer secondary busbars and any steelwork such as wall plates, screening etc.
  - Indoors: 100mm between the equipment at nominal 1,5kV or 3kV DC and negative busbars and panel steelwork, between the high voltage AC supply to the rectifier cubicles and panel steelwork, the equipment at nominal 3kV DC and negative busbars.

**9.0 OUTDOOR CLEARANCES AND INSULATION LEVELS**

9.1 The minimum safety outdoor earth clearances which shall be maintained between any live conductor or metal and earthed metal and the minimum clearances of power lines above ground are in accordance with the statutory requirements of clause 15.1 of the "Electrical Machinery Regulations" of the "Occupational Health and Safety Act and Regulations, Act 85,1993", and are tabled below: -

**TABLE 1:**

Highest phase-to-phase r.m.s voltage for equipment. (U <sub>m</sub> )	24kV	36kV	48kV	72kV	100kV	145kV
Nominal system r.m.s. voltage. (U <sub>n</sub> )	22kV	33kV	44kV	66kV	88kV	132kV
Minimum safety outdoor clearance	320mm	430mm	540mm	770mm	1000mm	1450mm
Minimum clearance of power lines above ground						
Outside security fence but within Transnet Freight Rail's reserve	5200mm	5300mm	5400mm	5700mm	5900mm	6300mm
Outside Transnet Freight Rail's reserve	5500mm	5500mm	5500mm	5700mm	5900mm	6300mm

9.2 In terms of Transnet Freight Rail's Electrical Safety Instructions the clearances between the nearest exposed electrical equipment and a restricted access way are tabled below: -

**TABLE 2:**

Highest phase-to-phase r.m.s voltage for equipment. (U <sub>m</sub> )	24kV	36kV	48kV	72.5kV	100kV	145kV
Nominal system r.m.s. voltage. (U <sub>n</sub> )	22kV	33kV	44kV	66kV	88kV	132kV
Restricted access way (Vertical height) *	2820mm	2930mm	3040mm	3270mm	3500mm	3950mm

\*See clause 903.1.3 of "Transnet Freight Rail's Electrical Safety Instructions"  
 (The vertical heights in restricted access ways for the various system voltages are calculated by adding 2,5metres to the normal outdoor earth clearance for the different system voltages. Refer to Annexure 9.4 of Transnet Freight Rail's Electrical safety Instructions).

**INSULATION LEVELS**

9.2 For the medium and high voltage nominal r.m.s voltage systems on Transnet Freight Rail the recommended Insulation levels in accordance with SANS 1019 is tabled in table 3.

**TABLE 3**

Highest phase-to-phase r.m.s voltage for equipment. ( $U_m$ )	Nominal system r.m.s. voltage. ( $U_n$ )	Rated lightning impulse withstand voltage peak.	Rated short duration power- frequency withstand r.m.s voltage.
7,2 kV	6,6 kV	75 kV	22 kV
12 kV	11 kV	95 kV	28 kV
24 kV	22 kV	150kV	50 kV
36 kV	33 kV	200 kV	70 kV
52 kV	44 kV	250 kV	95 kV
72,5 kV	66 kV	350 kV	140 kV
100 kV	88kV	380 kV 450 kV	150 kV 185 kV
145 kV	132 kV	550 kV 650 kV	230 kV 275 kV
245 kV	220 kV	850 kV 950 kV	360 kV 395 kV

Insulation levels for highest voltage for equipment  $U_m < 100$  kV are based on an earth fault factor equal to  $\sqrt{3}$  and for  $U_m > 100$  kV an earth fault factor equal to  $0,8\sqrt{3}$ . Where more than one insulation level is given per voltage system, the higher level is appropriate for equipment where the earth fault factor is greater than 1,4.

**TABLE 3:** Standard Voltages and insulation levels in accordance with SANS 1019:2008 [1]**SECTION 2: TRACTION SUBSTATION EQUIPMENT OUTDOOR YARD EQUIPMENT****10.0 METAL OXIDE SURGE ARRESTERS**

- 10.0 The contractor shall supply and install metal oxide gapless surge arresters in accordance with Transnet Freight Rail's specification BBB 0845.
- 10.1 The surge arresters shall be connected between each phase of the high voltage supply and substation main earth electrode/earth mat
- 10.2 The maximum protected distance from the main transformer bushing terminal to the surge arrester terminal shall be as indicated in table 4.

**TABLE 4:**

NOMINAL SYSTEM R.M.S VOLTAGE (kV)	MAXIMUM DISTANCE (Metres)
44kV	5
66kV	6
88kV	6
132kV	7

- 10.3 The neutrals of high voltage supplies are to be treated as effectively earthed unless otherwise specified.
- 10.4 For the installation of high voltage surge arresters on the main transformer, refer to Transnet Freight Rail's drawing BBB 0938
- 11.0 HIGH VOLTAGE AC DISCONNECTOR**
- The contractor shall supply and install the high voltage AC disconnecting switch in accordance with Transnet Freight Rail's specification BBB 7842.
- 12.0 HIGH VOLTAGE PRIMARY CIRCUIT BREAKER**
- The contractor shall supply and install the high voltage AC primary circuit breaker in accordance with Transnet Freight Rail's specification BBB 1267.
- 13.0 MAIN CURRENT TRANSFORMERS**
- 13.0 The main current transformers shall comply with the requirements of Transnet Freight Rail specification BBB 0937.
- 13.1 The main current transformers shall either be fitted in the high voltage bushings of the main traction transformer or shall be the freestanding post type current transformers install on the line side of the main traction transformer.
- 13.2 In the event of Eskom or Local Utility requiring three current transformers for metering purposes the successful contractor shall supply and install the additional current transformer.
- 13.3 The ratios, accuracy and burdens of the current transformers shall be in accordance with Transnet Freight Rail's Specification BBB 0937.
- 14.0 MAIN TRACTION TRANSFORMER**
- 14.1 The contractor shall be responsible for the delivery, assembling, filling of transformer oil and installation on site of the main traction transformer in accordance with Transnet Freight Rail's Specification BBB 5019.
- 15.0 AUXILIARY TRANSFORMER**
- 15.1 The contractor shall make provision for the supply of an auxiliary transformer which shall comply with the requirements of SANS.780
- 15.1.1 The auxiliary transformer shall be three phase with a minimum rating of 50kVA or higher depending on the substation requirements.
- 15.1.2 The 3 phase auxiliary transformer shall be supplied from the tertiary winding of the main traction transformer
- 15.1.3 The auxiliary transformer shall be the sealed unit type suitable for outdoor installation. Full details of the transformer shall be submitted.
- 15.2 In the case of a double unit substation one auxiliary transformer may be provided unless otherwise specified.
- 15.3 The secondary winding of the auxiliary transformer shall be star-connected.

- 15.4 The auxiliary transformer shall supply the required kVA rating without exceeding the permissible temperature rise laid down in SANS 780.
- 15.5 The nominal no-load secondary voltage of the auxiliary transformer shall be 400V three phase.
- 15.6 Off-load, externally operated tap changing gear shall be provided on the transformer, with tapplings to compensate for any change in the main transformer tapping.
- 15.7 All primary and secondary terminals, including the secondary neutral, shall be brought out through the transformer tank by means of bushing type terminals and shall be arranged for busbar/cable connections.

## **16.0 AUXILIARY TRANSFORMER PROTECTION**

### **PRIMARY WINDING**

- 16.0 The contractor shall make provision for overload protection of the primary winding. Refer to clause 8.8 of specification No BBB 2721.
- 16.1 The protection system shall consist of an approved type of overload relay with its associated current transformers.

### **16.2 SECONDARY WINDING**

- 16.3 The contractor shall supply and install a three phase isolating and earthing switch for the secondary supply of the auxiliary transformer to the substation.
- 16.4 The isolating and earthing switch shall be fitted with mechanical interlocking of the key exchange type, which shall form part of the interlocking procedure for the substation. Refer to clauses 31.0 and 32.0 of this specification.

## **17.0 AC EARTH LEAKAGE CURRENT TRANSFORMER.**

- 17.1 The contractor shall supply and install a bar primary current transformer for the AC earth leakage protection. The current transformer shall be installed on the support steel structure of the primary circuit breaker.
- 17.2 One terminal of the primary winding shall be connected to the primary circuit breaker frame and the other terminal shall be connected to the substation main earth electrode/mat. (Refer to drawing CEE-TBD-7 and BBB 3620).
- 17.3 The current transformer shall be class 10P10, ratio 50/5 or 100/5.
- 17.4 The current transformer shall be designed to withstand a test voltage of 2kV for 1 minute.

## **INDOOR EQUIPMENT**

### **18.0 3kV DC RECTIFIER EQUIPMENT**

- 18.1 The contractor shall supply and install 3kV DC rectifiers in accordance with Transnet Freight Rail's Specification BBB 0496.
- 18.2 Each rectifier unit and its associated control equipment shall be designed to form an independent unit.
- 18.3 The rectifier equipment shall be installed in screened bays fitted with gates.
- 18.4 The gates shall be fitted with mechanical interlocks of the key exchange type in accordance with clauses 31 and 32 of the specification.
- 18.5 The bay screens shall be constructed of approximately 25mm woven wire mesh or expanded metal fixed to tubular or angle iron frames complete with doors, pillars, gates etc.
- 18.6 The height of the screens and gates shall be similar to the height of the control panels but shall be not be less than 1,8 m.
- 18.7 In a double unit substation the rectifier units are referred to as the "A" and "B" units and shall be labelled as such.

- 18.8 It is required that each rectifier unit in a double unit substation can be isolated independently and earthed without shutting down the whole substation.
- 18.9 Individual rectifier units shall be screened from each other and from any other live common equipment. A mechanical key exchange interlocking system type in accordance with clauses 31 and 32 shall be fitted to ensure the safety of personnel working on the isolated rectifier equipment.
- 18.10 The rectifier units and bay screens shall be insulated from the floor.

### **19.0 3kV DC REACTOR**

- 19.1 The contractor shall supply and install a 1.8 milli Henry 3kV DC air core reactor for each rectifier unit. The installation shall include the supply of all the required insulators, foundations, foundation bolts and fasteners.
- 19.2 The 3kV DC reactor shall be in accordance with Transnet Freight Rail's Specification BBB 3890.
- 19.3 The reactor shall be insulated from the substation floor by means of insulators.
- 19.4 Sufficient space shall be allowed for access to the reactor for maintenance and inspection purposes.

### **20.0 WAVE FILTER**

- 20.1 The contractor shall supply and install the wave filter equipment in accordance with Transnet Freight Rail's specification BBB 3139 for wave filter capacitors and BBB 3162 for inductor coils.
- 20.2 A wave filter is connected in parallel with the rectifier output. The filter unit is a capacitive inductive circuit, which is tuned to resonate at specific harmonic frequencies.
- 20.3 The filter equipment shall be so designed that no individual harmonic voltage is greater than 2% of the output voltage.
- 20.4 The inductor coils shall have sufficient adjustment to compensate for change in the capacitance values due to ageing. Refer to Transnet Freight Rail's drawing BBB 3483 for assembly.
- 20.5 A 100 Ampere High Rupturing Capacity (H.R.C) fuse shall be fitted to protect the wave filter equipment.
- 20.6 The fuse holder shall be mounted on insulators.
- 20.7 The insulators shall be so designed that the flashover path is not less than 100mm and shall support the fuse at a distance of not less than 100mm from the bolts securing the base plate. The insulators shall have a minimum dry flashover value of 20kV.
- 20.8 Access to the wave filter equipment shall only be possible once the wave filter capacitors have been connected to rail, discharged and the primary circuit breaker tripped.  
A 75 kilo Ohm resistor consisting of two 150 Kilo Ohm, 150 watt vitreous enamel resistors connected in parallel shall be provided for the discharging of the wave filter capacitors when the equipment is isolated and earthed.
- 20.9 The discharge resistors shall be mounted on a suitable insulation panel or bar, which shall be insulated for 3kV DC. A minimum clearance of 75mm must be provided between the terminals, and 100mm between any 3kV live portion of the equipment and earth.
- 20.10 The wave filter capacitors shall be earthed with 95mm<sup>2</sup> PVC insulated copper cables to the DC earth leakage system.
- 20.11 The wave filter equipment shall be housed in a separate explosion proof room or cubicle.

### **21.0 3kV DC POSITIVE ISOLATOR**

- 21.1 The contractor shall supply and install the 3kV DC positive isolator in accordance with Transnet Freight Rail's specification BBB 4724.
- 21.2 The DC positive isolator metal cubicle/housing shall be insulated from the substation floor.

### **22.0 CONTROL PANELS**

- 22.1 The contractor shall supply and install the AC primary circuit breaker control panel and the AC/DC distribution panel in accordance with Transnet Freight Rail's specification BBB 2721.

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22.2 The control panels shall be insulated from the substation floor.

### **ELECTRONIC EQUIPMENT**

22.3 The tenderer must be aware that high voltage surges and transient voltages can be induced in low voltage and control wiring due to switching and lightning. Special care shall be taken in the design and layout of the equipment to limit these voltages.

22.4 Electronic equipment shall suitably be protected against over voltages, surges and transients. Dehn type surge protection units or equivalent shall be used. Liberal use of metal oxide varistors is also encouraged.

### **23.0 BATTERIES**

23.1 The contractor shall supply, install and commission a 53 cell 110 Volt Planté lead acid battery bank. The capacity of the battery can either be 100 Ampere hour rating, 200 Ampere hour rating or capacity dependant on the substation requirements.

The standard for the batteries shall be the 10-hour rate at 20°C. The battery shall be capable of delivering a minimum of 10 Amperes for 10 hours.

23.2 Batteries are installed in traction substations for control and protection purposes. The battery is used for the following functions:

- Tripping and closing of primary circuit breakers.
- Supply to protection relays.
- Closing and holding coil supply to DC high speed circuit breakers.
- 110 Volt supply to control panel.

### **24.0 BATTERY CHARGER**

24.1 The contractor shall supply and install the battery charger in accordance with Transnet Freight Rail's specification BBB 2502.

24.2 The battery charger shall be insulated from the substation floor by means of "Marley" or "Lino" floor covering not less than 2mm thickness.

### **25.0 TRACK FEEDER HIGH SPEED CIRCUIT BREAKERS**

25.1 The successful tenderer shall supply and install the required 3kV DC high speed circuit breakers in accordance with Transnet Freight Rail's specification CEE.0099 as well as with the following additional requirements:

25.2 The high-speed circuit breakers shall be of the conventional truck mounted type as commonly used by Transnet Freight Rail in the 3kV DC traction substations.

25.3 High-speed circuit breakers shall be fitted with an automatic reclosing feature, which provides for 1 (one) reclosure at 20 to 35 seconds interval. Refer to drawings CEE-TBP-35. "Connection diagram for the high speed circuit breaker and electronic control relay". CEE-TBP-39. "Circuit diagram for auto reclosure for the high speed circuit breaker.

25.4 Transnet Freight Rail shall provide the auto reclosure relays. The relays shall be wired by the contractor in accordance with the requirements of clause 25.3.

25.5 The high speed circuit breakers shall be complete in all respects. This shall include housings, rack out trucks, base rails, main and auxiliary contacts and flapper gear and any other fittings or equipment required for the correct operation of the high-speed circuit breakers.

25.6 The high-speed circuit breakers shall be racked into breaker cells, each having two fixed contacts mounted at the rear of the breaker cell. One contact is connected to the substation positive busbar and the other to a wall bushing mounted in the building outer wall.

25.7 All other items of material such as cell slabs, main busbars, earthing connections, wall bushing plates or blanking-off plates, control cables etc, shall be included in the tenderer's offer.

25.8 Transnet Freight Rail shall provide details of the wall plate frame and standard cell slabs where applicable.

- 25.9 Where access is possible to the rear of the high-speed circuit breakers (busbar chamber) access barriers shall be installed.
- 25.9.1 The barriers shall be fixed to angle iron frames with fasteners which only be removed with tools. Warning signs shall be fitted to the barriers.

## **26.0 MODULAR TYPE STEEL HOUSED HIGH SPEED CIRCUIT BREAKERS**

- 26.1 Where tenderers offer modular type high-speed circuit breakers they shall submit full information, construction and dimensional drawings with their offer.
- 26.2 Transnet Freight Rail specification CEE.0227 shall be used as a guideline.
- 26.3 The tenderers must be fully aware that the requirements of Transnet Freight Rail's specification CEE.0099 are relevant.
- 26.4 Transnet Freight Rail reserves the right to accept or reject offers for equipment after consultation with tenderers. Transnet Freight Rail's Senior Engineer, Technology Management, shall approve all designs.
- 26.5 The modular type steel housings shall be insulated from the substation floor.

## **27.0 REGENERATIVE HIGH SPEED CIRCUIT BREAKER**

- 27.1 At certain substations Transnet Freight Rail will require 3kV DC regenerative braking energy absorption equipment. If required the successful contractor shall supply the high speed circuit breaker for the protection of the regenerative braking equipment in accordance with Transnet Freight Rail's specification CEE.0099.

## **28.0 3kV DC UNDERVOLTAGE RELAY**

- 28.1 The contractor shall supply and install a 3kV DC under-voltage relay with a high voltage potential divider in accordance with Transnet Freight Rail Specification BBB 3005 and shall provide the following:
- 28.2 Fibre optic technology must be used to provide galvanic isolation between the potential divider and the undervoltage relay.
- 28.3 The potential divider shall be mounted in the 3kV busbar chamber or in the high voltage compartment of the positive isolator cubicle in accordance with Transnet Freight Rail's Specification BBB 4724.
- 28.4 The potential divider shall be protected by an H.R.C fuse connected between the positive side of the 3kV DC supply and the input of the potential divider.
- 28.5 Insulation clearance shall be not less than 100mm. All normally live equipment on the potential divider shall withstand a test voltage of 10,5kV AC RMS 50 Hz for one minute to earth without breakdown.
- 28.6 If the undervoltage relay is wall mounted, an engraved warning label shall be fixed to the front of the undervoltage relay panel with the following warning:

### **WARNING**

**THE POSITIVE BUSBAR MUST BE ISOLATED AND EARTHED BEFORE WORK IS UNDERTAKEN ON THE UNDERVOLTAGE RELAY**

- 28.7 The following connections shall consist of 95mm<sup>2</sup> cross-sectional area copper or copper equivalent conductors.
- Potential divider to negative busbar.
  - Resistor base plate to DC earth leakage busbar.
  - Relay metal case to DC earth leakage busbar.

## **SECTION 3: INSTALLATION**

### **SUBSTATION EARTHING**

#### **29.0 INDOOR EARTHING (REFER TO DRAWING CEE-TBD-0007)**

The successful contractor shall supply, install and comply with the following:

- 29.1. The supply and installation in the substation building of all earthing conductors for the earthing of all metal work which includes supporting frames, control panels, battery charger, positive isolator panel, track breaker cells, rectifier bay screens, chequer plates and metal bases of insulators mounted directly on the walls or floor etc.
- 29.2. The frames and bases of all items associated with the 3kV DC including the track feeder wall plates, shall be connected through the DC earth leakage relay to the negative busbar in accordance with Transnet Freight Rail's drawing CEE-TBD-0007.
- 29.3. The DC earth leakage relay and the installation thereof shall comply with the requirements specified in clause 8.6 of Transnet Freight Rail's specification BBB2721.
- 29.4. Earthing conductors which could be subjected to 3 kV DC faults caused by insulation breakdown, etc., shall be not less than 70mm<sup>2</sup> copper strap cross-sectional area or 95mm cross-sectional area PVC insulated stranded copper cable. Other earth conductors must have a minimum of 16mm<sup>2</sup> copper cross-sectional area.
- 29.5. The earthing system for the 3kV DC positive busbar chamber shall be supplied by the successful tenderer. The design of the system shall be in conjunction with Transnet Freight Rail staff.
- 29.6. The successful tenderer shall supply the portable earthing device and cables according to Transnet Freight Rail's requirements.
- 29.7. All connections to the DC earth leakage relay shall form part of a ring circuit for safety when part of the circuit is disconnected. Refer to drawing CEE-TBD-0007.
- 29.8. The earth conductors shall not be installed in such a manner as to bridge out the earth leakage relay.
- 29.9. The resistance between the DC earth leakage busbar and the substation main earth electrode/mat shall be not less than 25 ohms.
- 29.10. Holding-down bolts grouted in the floor shall not be in direct contact with reinforcing or in with the earth under the concrete floor in the substation.
- 29.11. Where mounting bolts are used for securing electrical equipment to the floor, these bolts must be insulated to prevent electrical contact with any reinforcing or floor.
- 29.11.1 The indoor substation equipment shall be earthed in groups as shown in Transnet Freight Rail's drawing CEE-TBD-0007.

#### **30.0 OUTDOOR EARTHING (DRAWING NO CEE-TBD-7 AND BBB 3620)**

The successful tenderer shall supply, install and comply with the following:

- 30.1 Outdoor yard earthing which includes earth spikes, trench earths, earth connections to the support steel structures and fence posts. The material used shall comply with Transnet Freight Rail's specification BBB 3059 and drawing BBB3620.
- 30.2 A rail-earth switch mounted on the gate that provides access to the outdoor yard and where applicable to the 3kV DC overhead feeder security area and provides all connections thereto.
- 30.3 In Transnet Freight Rail switchyards where the supply from the Electrical Utility is terminated on portal structures or where a flying busbar is provided the contractor shall earth these structures.
- 30.3.1 Install two 50mm<sup>2</sup> galvanised steel earth conductors, one each between the outside portal structure or flying busbar support and the gable of the substation building.

- 30.3.2 The earth conductor shall be suitably terminated and connected to the portal or flying busbar structures. A suitable bracket shall be supplied and mounted on the gable of the substation building. The earth conductors shall directly be terminated on the bracket and connected to the main earth electrode/mat.

**Insulating of structures and electrical equipment.**

- 30.3.3 The tenderer shall make provision for the insulating of the support steel structures for i.e. the primary circuit breaker, main current transformers and any other structure that is connected to the AC earth leakage system from the concrete foundation.
- 30.3.3.1 The insulating material shall be either the same material used for the insulating of the mast bases for the overhead track equipment or other insulating material that has been approved by Technology Management.
- 30.4. The tenderer shall make provision for the insulating of the base of the main traction transformer from the concrete plinth. Malthoid or any other approved insulation shall be used.

**31.0 INTERLOCKING**

**GENERAL**

- 31.1 The equipment for each substation shall include a mechanical interlocking system; preferably the "Castell" or other approved key type. Full details of the type offered instead of the "Castell type shall be submitted with the tender.
- 31.2 The mechanical interlocking system must be designed to prevent access to the high voltage equipment whilst "live" and ensure that switching and isolating operations are carried out in the correct sequence.
- 31.3 All equipment shall be delivered with the necessary interlocks fitted.
- 31.4 It shall not be possible to operate the locks and release the keys in any but the correct sequence or in any position of the switches or gates, other than the fully "closed" or fully "open" position, as the case may be.
- 31.5 When a unit is switched to local condition and isolated, no remote switching from the control office shall be possible. Tenderers shall furnish full explanatory details of the arrangement whereby the foregoing provisions are met.
- 31.6 The track feeder breakers shall remain closed throughout the isolation procedure.

**32.0 ISOLATING PROCEDURE**

Sequence to isolate a single unit substation rectifier unit.

- 32.1 Trip high voltage AC circuit breaker.
- 32.2 Open high voltage AC disconnecting switch-key "1" released.
- 32.3 Remove key "1"- AC disconnecting switch locked in open and earthed position.
- 32.4 Use key "1" to operate auxiliary supply's three phase isolating and earthing switch - key "1" trapped - key "2" released.
- 32.5 Use key "2" to unlock DC positive isolating and earthing switch.
- 32.6 Open DC positive isolating and earthing - key "2" trapped - key "3" released. Remove key "3". DC positive isolating and earthing switch locked in open position.
- 32.7 Use key "3" to open rectifier unit bay gate (and DC smoothing reactor screen if required).
- 32.8 If a number of keys are required to open the rectifier cubicles, a key exchange system may be used.
- 32.9 Procedure is reversed to switch the rectifier unit back on load.
- 32.10 The number indicated for the keys are for single unit substations only. Where there are two units in one substation the numbers of keys for the two units shall be A1 and B1, A2, and B2, etc. It shall not be possible to exchange keys between any equipment on different units.

- 32.11 The foregoing sequence is given as a guide and may be altered to suit tenderer's equipment. The design shall be approved by Transnet Freight Rail.
- 32.12 Where the wave filter equipment is not located in the rectifier bay, the access to the equipment shall be mechanically interlocked and form part of the interlocking procedure.
- 32.13 Access to the wave filter shall only be possible once the positive isolator is earthed and the primary circuit breaker is tripped. Refer to clause 20.8
- 32.14 Any deviation from the above guideline must be approved by Transnet Freight Rail.
- 33.0 INDOOR CABLING, BUSBARS AND ASSOCIATED EQUIPMENT**
- The contractor shall supply and install the following:
- 33.1 All low voltage PVC insulated supply and control cables.
- 33.2 3kV DC copper cables and copper busbars from the Anode wall plate to the rectifier and from the rectifier equipment to the DC positive isolating switches, DC smoothing reactors, and main DC negative busbar. In the event of aluminium (grade 6063) being used the minimum size shall be 50mm x 25mm busbar.
- 33.3 Where required, the supply and fitting of hot dip galvanised anode wall plates in the wall of the substation building, at the rectifier bays. The wall plate galvanising shall comply with SANS 121.
- 33.3.1 Wall plates shall be fitted with wall bushings, one for each phase and the neutral.
- 33.3.2 Designs and drawings of the wall plate arrangement must be submitted for approval after adjudication of the tender.
- 33.4 The interconnecting busbars from the anode wall plate to the rectifier.
- 33.5 The main 3kV DC positive and negative copper busbars. Minimum dimension of busbars shall be 100mm X 10mm copper or 127mm X 12,5mm aluminium (grade 6063) busbar.
- 33.6 The 3kV DC output positive busbar system, which includes high-speed circuit breaker busbars, and where required the outgoing feeder cables between the high speed circuit breaker busbars and wall bushings.
- 33.7 Barriers in accordance with clause 8.0 where exposed busbars exist between the positive isolator and the DC track breaker positive, busbar.
- 33.8 Cables from the DC smoothing reactor or main positive busbar to the wave-filter equipment.
- 33.9 Control cables from the rectifier cubicles to their respective control panels.
- 33.10 Cables from the auxiliary equipment to the substation control panels.
- 33.11 Connections and cabling between control panels.
- 33.12 Cables between the 110V substation battery and the auxiliary DC panel (2 core, minimum 16mm<sup>2</sup>).
- 33.13 Cables (95mm<sup>2</sup> stranded copper) to the wave-filter room(s) for rail (negative) and DC earth leakage connections to wave-filter equipment.
- 33.14 Earthing cables (95mm<sup>2</sup> stranded copper) between the DC earth leakage busbar and substation negative busbar.
- 33.15 Two core 16mm<sup>2</sup> and multicore 2,5mm<sup>2</sup> cables between panel and high-speed 3kV DC circuit breakers.
- 33.16 Two core 6mm<sup>2</sup> cables between the 25A circuit breakers on the DC panel and the Electrical Supply Utility meter room. Make-off and connect at the DC panel only.
- 33.17 All other busbars and cables required for the interconnection of the substation indoor equipment.
- 33.18 Cable glands for the termination of the cables at the control panels and other equipment. Neoprene shrouds shall be fitted over the cable glands.

- 33.19 The maximum current density per square mm for open conductors shall not exceed 1.55 Ampere for copper and 1.0 Ampere for aluminium.
- 33.20 Low voltage cables for indoor use may be unarmoured.
- 33.21 All high voltage cables shall be armoured XLPE insulated and shall comply with SANS 1339 and Transnet Freight Rail specification BBC 0198. All wiring used on the 3kV DC equipment shall have nominal 3kV insulation unless the clearances comply with those laid down in clause 8.9.
- 33.22 All negative connections and terminals associated with high voltage circuits and which are accessible without first having to isolate and earth such high voltage circuits e.g. the main negative busbar, DC earth leakage relay, etc., shall be of 95mm<sup>2</sup>, copper or copper equivalent cross-section. The terminals shall be painted red.
- 33.23 Notwithstanding the above clauses the contractor shall supply and install any other cables, conductors or busbars required for the successful operation of the substation.

#### **33.24.0 BLOCK JOINTS**

- 33.24.1 The contractor shall make block joints in the armouring of all the low voltage supply and control cables, which are connected between the indoor control equipment and the outdoor yard equipment.
- 33.24.2 The block joints shall be clearly visible and shall be not less than 200mm from the cable glands terminating at the outdoor equipment.
- 33.24.3 The block joints shall be sealed with a heat shrink covering to prevent the ingress of moisture.

#### **33.25.0 CHEQUER PLATES**

- 33.25.1 The contractor shall be responsible for the supply of all metal chequer plates required for covering of cable trenches inside the substation.
- 33.25.2 Earthing studs suitable for the fitting of 95mm<sup>2</sup> copper cable shall be welded to each chequer plate.

### **34.0 CABLES, BUSBARS AND CONNECTIONS (OUTDOOR)**

The Contractor shall supply and install the following:

- 34.1 The Inter-connections cables or conductors in the High Voltage yard.
- 34.2 The high voltage AC connections which shall be solderless, concentric grip, or other approved solderless type. The connections must have adequate cross-sectional area to suit both electrical and mechanical requirements.
- 34.3 Copper busbars between separately mounted outdoor equipment. The busbars shall incorporate a degree of flexibility to avoid any overstressing of connections due to foundation movement and expansion or contraction.
- 34.4 All negative connections and terminals associated with high voltage circuits and which are accessible without first having to isolate and earth such high voltage circuits e.g. the main negative busbar shall be of 95mm<sup>2</sup>, copper or copper equivalent cross-section. The terminals shall be painted red.
- 34.5 Copper busbars with removable flexible connections or "all aluminium" stranded conductor may be used interconnection conductors between the main traction transformer secondary bushings and the anode wall bushings which are fixed to the anode wall plate of the substation building.
- 34.5.1 Where "all aluminium conductors are to be installed the following sizes and number of conductors shall be installed:
- 2 X 800 mm<sup>2</sup> "all aluminium" stranded conductor per each phase for 6 MW substations, or 50mm X 25mm aluminium (grade 6063) busbar in accordance to Transnet freight rail drawing BBF1615
  - 2 X 800 mm<sup>2</sup> "all aluminium" stranded conductor per each phase for 4,5 MW substations, or 50mm X 25mm aluminium (grade 6063) busbar in accordance to Transnet freight rail drawing BBF1615.

- 2 X 500 mm<sup>2</sup> “all aluminium” stranded conductor per each phase for 3 MW substations, or 50mm X 25mm aluminium (grade 6063) busbar in accordance to Transnet freight rail drawing BBF1615.

- 34.5.2 Where two different conductor material joints are used, the Bi-Metallic plates shall be applied.
- 34.6 Conductors from the high voltage AC line aerial conductors and between the surge arresters, AC disconnecting switch, high voltage AC circuit breaker, current transformers, rectifier transformer and rectifier.
- 34.7 Cables or busbars from the rectifier transformer to the auxiliary transformer.
- 34.7.1 The auxiliary transformer shall be connected directly to the tertiary winding of the traction transformer for new installations or existing installations where tertiary windings are employed on the main traction transformer.
- 34.8 Cable from the auxiliary transformer secondary to the short-circuiting switch.
- 34.9 Control cables from the high voltage AC disconnecter, AC circuit breaker and main and auxiliary transformers to the substation control panels.
- 34.10 A multi-core 4mm<sup>2</sup> cable between the current transformers and the Electrical Supply Utility meter room. Make-off and connect at the current transformer only.
- 34.11 In the case of the Electrical Supply Utility Tee-supplies a multi-core 4mm<sup>2</sup> cable between the voltage transformers and the Electrical Supply Utility. The Electrical Supply Utility will do the cable connection.
- 34.12 In the case of the Electrical Supply Utility Duplicate Supplies one multi-core 4mm<sup>2</sup> cable between Transnet Freight Rail's high voltage AC circuit breaker and the Electrical Supply Utility meter room. (For interlocking Electrical Supply Utility M.O.D's). The cable shall have 10% spare cores.
- 34.13 A multi-core 2,5mm<sup>2</sup> cable between the tele-control remote terminals on the control panel and the electrical supply utility meter room. (For tele-control of the Electrical Supply Utility equipment). The cable shall have 10% spare cores.
- 34.14 All other cables as specified. e.g. security lighting and alarms.
- 34.15 All control cables, security and alarm cables shall be armoured cables.
- 34.16 Notwithstanding the clauses above the contractor shall be responsible for all cables, busbars and connections required for the successful operation of the 3kV DC traction substation.

### **35.0 LABELS AND TERMINALS**

- 35.1 All labels shall be in English. All lettering shall be white on a black background. Lettering shall be a minimum of 6mm in height.
- 35.2 All labels shall be neatly secured by rivets or screws.
- 35.3 All conductors and cables shall be provided with identification tags at terminals.
- 35.4 All terminals and equipment such as switches and relays shall be suitably numbered according to the substation schematic and wiring diagrams. All terminal blocks and groups of terminal blocks shall be suitably numbered.

### **36.0 SUBSTATION NEGATIVE RETURN**

The substations negative return system which can be in the form of the following:

- Buried XLPE insulated copper cable.
- Rail on sleepers.
- Aerial conductors.

**36.1 BURIED XLPE INSULATED COPPER CABLE**

- 36.1.1 The contractor shall install 2 x 500mm<sup>2</sup> single core XLPE copper cables from the substation negative busbar to the negative manhole situated near the railway line.
- 36.1.2 Transnet Freight Rail's staff will undertake the provision of the bare conductors from the negative manhole to track, as well as the rail connections.
- 36.1.3 The negative manhole to drawing CEE-TU-41 is to be supplied and installed by the contractor.
- 36.1.4 The negative return cables shall be laid, in 150mm of soft soil in a trench, at a depth of not less than 1000mm below ground level and spaced not less than 300mm between centres.
- 36.1.5 Where cables are likely to be damaged they shall be protected by concrete slabs. Refer to Transnet Freight Rail specification CEE.0023.
- 36.1.6 The cable route shall be provided with cable warning tape. Refer to Transnet Freight Rail specification CEE.0023.
- 36.1.7 The cable runs shall be marked by cable markers painted signal red. (Stores Item No 9/1503)

**36.2 RAIL NEGATIVE RETURN.**

- 36.2.1 Where rail is used for the negative return system Transnet Freight Rail shall supply and install the rail from the inside of the substation building to the railway track.
- 36.2.2 The rail shall be insulated from ground by means of concrete sleepers supplied by Transnet Freight Rail.
- 36.2.3 Where the rail enters the substation building it must be insulated from all concrete and brickwork to prevent stray current damage to building reinforcing or other metal. After installation the hole in the wall shall be sealed and made good by Transnet Freight Rail.
- 36.2.4 The rail shall be connected to negative output of the rectifier by means of a suitably rated busbar/cable supplied by the contractor. Transnet Freight Rail will make provision for terminations on the rail.
- 36.2.5 Transnet Freight Rail shall connect the negative return rail to the track by means of PVC insulated steel conductors.

**36.3 NEGATIVE FEEDER MONITORING SYSTEM.**

- 36.3.1 The contractor shall design supply and install a negative feeder monitoring system in accordance with Transnet Freight Rail specification BBB1843.
- 36.3.2 The negative feeder monitoring system shall be designed to trip the 3 kV DC track breakers in the event of the traction substation negative return circuit becoming open circuited due to cable theft of the negative return cables or other cause of failure of the negative return circuit.

**36.4 AERIAL CONDUCTORS**

- 36.4.1 Where aluminium conductors are installed; 2 X 800 mm<sup>2</sup> size for both 4.5 MW and 6 MW shall be used and 2 X 500 mm<sup>2</sup> for 3 MW substations.
- 36.4.2 Where aerial conductors are used for the negative return, the contractor shall provide the wall plates and wall bushings where required.
- 36.4.3 In the case of aerial conductors used for the negative return, Transnet Freight Rail shall provide the conductors and the installation.

**37.0 3kV DC POSITIVE FEEDER CABLES**

The positive feeder cables shall be either:

- Buried armoured medium voltage XLPE insulated cable.
- Aerial aluminium conductor

**37.1 BURIED XLPE INSULATED CABLE**

- 37.1.1 The contractor shall install two single core 6,6kV, 500mm<sup>2</sup> armoured medium voltage XLPE insulated cables with stranded copper conductors. The cables shall be manufactured with copper tape screen, armour and sheath in accordance with SANS 1339 and Transnet Freight Rail specification BBC 0198. The cables shall run from the high-speed circuit breaker busbar chamber to the associated track switch structure.
- 37.1.2 Tenderers are to allow for making off the cables with suitable terminations. Sufficient length of cable must be left buried at the base of the track switch structure for erection and connection to the track switch. Transnet Freight Rail will do connection to the track switch.
- 37.1.3 The medium voltage cables shall be laid in 150mm of soft soil, in a trench at a depth of not less than 1000mm below ground level and spaced not less than 300mm between centres.
- 37.1.4 Where cables are likely to be damaged they shall be protected by concrete slabs. Refer to Transnet Freight Rail specification CEE.0023.
- 37.1.5 The cable route shall be provided with cable warning tape. Refer to Transnet Freight Rail specification CEE.0023.
- 37.1.6 The cable runs shall be marked by cable markers painted white (Stores Item No 9/1539).
- 37.1.7 Should it be necessary for the cables to pass under the tracks suitable pipes will be installed by Transnet Freight Rail.
- 37.1.8 Where required, the contractor shall supply the necessary wall bushings for positive feeder cables.

## **37.2 AERIAL CONDUCTOR**

- 37.2.1 In the case of aerial conductors used for the positive feeders, Transnet Freight Rail shall make provision for conductors and installation.
- 37.2.2 Where aerial conductors are used for the 3kV DC positive, the contractor shall provide the wall plates and wall bushings.

## **38.0 TRENCHING FOR OUTDOOR YARD EARTHING CONDUCTORS AND CONTROL CABLES**

- 38.1 Before any trenching commences the contractor shall consult with Transnet Freight Rail staff for approval of the routing of the trenches in the outdoor yard.
- 38.2 In existing substation outdoor yards the contractor shall remove the necessary crusher stone in the outdoor yard before any excavation commences. The contractor shall restore the crusher stone after the completion of the work.
- 38.3 Trenching includes all trenches required for the installation of the earthing system and control cables.
- 38.4 The depth of trenches shall not be less than 700 millimetres.
- 38.5 With the installation of new earthing conductors and control cables at existing substations, care must be taken not to damage existing cables in the high voltage outdoor yard during trenching operations.
- 38.6 The Contractor and Transnet Freight Rail staff shall inspect the trenches before and during the installation of the earthing system and control cables.
- 38.7 Before the trenches are closed a representative from Transnet Freight Rail shall inspect the earthing system and other cabling for damage.

## **39.0 FOUNDATIONS.**

- 39.1 The successful tenderer shall be responsible for the design and casting of foundations for the portal and support structures in the traction substation high voltage outdoor yard.
- 39.2 Notwithstanding the supply arrangements (single or double) at any particular substation, tenderers shall clearly understand that all foundations and steelwork to accommodate the supply and to cater for the traction yard are to be provided and erected by the successful tenderer.

- 39.3 Wherever there is a combined traction and 11kV/6,6kV distribution yard, a flying busbar is to be provided in Transnet Freight Rail's yard. All foundations and steelworks required to suit this arrangement, including the erection and earthing thereof shall be included in tenderer's offers.
- 39.4 The foundations in the high voltage outdoor yard shall include the following:
- Voltage Transformers if applicable.
  - Surge arresters.
  - AC disconnectors.
  - Current transformers. (If applicable)
  - Primary circuit breakers.
  - Main traction transformer.
  - Auxiliary transformers.
  - Portal lattice structures as required.
  - Any other foundations as specified.
- 39.5 The successful tenderer shall carry out his own survey in regard to soil types and their load bearing capabilities.
- 39.6 Equipment support foundations shall be finished off 200mm above the finished earth level of the yard. The design must be such as to prevent standing water.
- 39.7 All foundation edges shall be bevelled, and the surfaces must be float finished.
- 39.8 All support foundations shall be at the same level.
- 39.9 The design of the concrete plinth for the main traction transformer shall include a concrete gutter around the perimeter of the plinth to contain any spillage of transformer oil.
- 39.10 Provision shall be made on the plinth for skid rails. The spacing of the rails between centres shall be a minimum of 1meter. Details of the design and load bearing parameters of the skid rail system, plinth and rail shall be submitted to Transnet Freight Rail for approval.
- 39.11 The auxiliary transformer if separate shall be provided with its own concrete plinth with a concrete gutter, or may be installed on the same plinth as the main traction transformer.
- 39.12 The 28-day strength of all concrete used shall be a minimum of 20Mpa.
- 39.13 Hand mixed concrete is not acceptable, it must be mechanically mixed.
- 40.0 SUPPORT STRUCTURES**
- 40.1 The design, supply and installation of all steel structures for the support of equipment and tensioning of conductors shall be the responsibility of the successful tenderer.
- 40.2 Special attention shall be taken for the prevention of corrosion of all metallic parts.
- 40.3 The bases of insulators, studs, bolts, support structures and other parts made of ferrous material associated with the electrical connections outdoors, shall be hot-dip galvanised, in accordance with SANS 121.
- 40.4 Steelwork for outdoor installation in coastal areas, i.e., within 50km of the coast, shall first be hot-dip galvanised in accordance with SANS 121, followed immediately at the galvanising plant by the application of the Sterling paint system in accordance with specification CEE.0045.
- 40.5 Steelwork for outdoor installation in inland areas, i.e., at a distance greater than 50km from the coast, shall be hot-dip galvanised to SANS 121.
- 40.6 All high voltage equipment shall be provided with hot-dipped galvanised support structures or pedestals to provide a minimum clearance of 3,6 m (up to 88kV) or 4,1 m (above 88kV) from the lowest "live" high voltage connection to finished ground level.

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- 40.7 Structural steel shall comply with SANS 1431.
- 40.8 All welded joints shall be seal welded with no gaps or blowholes.
- 40.9 All fasteners, nuts and bolts used for the installation of substation steelwork and equipment shall be hot dipped galvanized to prevent corrosion.
- 41.0 FENCING**
- 41.1 The successful tenderer shall supply and install new perimeter fencing as specified.
- 41.2 The successful tenderer shall make provision for the levelling of outdoor yard if required.
- 41.3 The fencing shall be either of the following:
- Concrete palisade fencing in accordance to drawing CEE-TDF- 0016.
  - Hot dipped galvanised steel palisade fencing with the minimum requirements of:  
Height 2,4 metres  
Size and thickness of pales 40mm x 40mm x 3mm thick.  
Corner and intermediate posts 100mm x100mm x 3mm.  
Horizontal cross bars 40mmx5mm.
- 41.3.1 The successful tenderer shall make provision for the installation of safety barriers in the high voltage yard in accordance with Transnet Freight Rail's requirements. (Refer to Transnet Freight Rail's Engineering instruction S.016)
- 41.3.2 The successful tenderer shall make provision for a metal barrier screen of 25mm-wire mesh or expanded metal to be constructed around the auxiliary transformer to prevent accidental contact.
- 41.3.3 The successful tenderer shall cast a concrete apron of 150mm wide x 300mm under the perimeter fences of the substation. The top of the apron shall be a minimum of 100 mm above the ground level.
- 42.0 GATES**
- 42.1 The contractor shall supply and install two 4.6 metre wide X 2,4 metres minimum height lockable gates in the perimeter fence to allow for:
- Entrance to substation building and yard.
  - Entrance to the high voltage outdoor yard adjacent to the main transformer (s).
- 42.2 The frame of the substation gate shall be 80 x 60 x 5mm
- 42.3 Where access to the HV outdoor yard is gained between the substation building and perimeter fence, a fence the same height as the perimeter fence shall be installed. A 1000mm wide lockable gate shall form part of the fence.
- 42.4 Provision must be made for the fitting of a spark gaps and rail earth switch on the HV yard small gate. Refer to drawings CEE-TBD-7 and BBB3620. The spark gaps shall be provided by Transnet Freight Rail on request.
- 42.5 Where steel palisade fencing is used the gates shall be connected to the fence support post by means of a flexible connection to prevent electrolytic corrosion of gate hinges.
- 42.6 Warning notices and danger signs in accordance with Transnet Freight Rail's Electrical Safety Instructions shall be fitted to the perimeter fencing and gates. This shall be provided by Transnet Freight Rail.
- 43.0 CRUSHER STONE AND WEED KILLER**
- 43.1 After completion of construction, installation of equipment, the laying of all cables and earthing conductors, a suitable weed killer approved by the Technical Officer shall be applied in HV outdoor yard.
- 43.2 Great care shall be exercised to avoid contaminating private property and water supplies.
- 43.3 After treatment with the weed killer, a 100mm layer of 25mm crusher stone shall be laid over the whole area of the Transnet Freight Rail high voltage outdoor yard (within the apron).

**44.0 PAINTING**

44.1 All indoor and outdoor steelwork, metal screens and barriers shall be painted in accordance with Transnet Freight Rail's Specification CEE.0045.

44.2 The finishing coats for indoor equipment shall be in accordance with SANS 1091.

Metal Bay Screens - Eau-de-Nil (H43).

Support frameworks (indoor) - Eau-de-Nil (H43).

**45.0 DISTRIBUTION, LIGHTING OF SUBSTATION BUILDING AND STANDBY 400V AUXILIARY SUPPLIES**

45.1 The successful tenderer shall supply and install all light fittings, plugs, conduits, distribution boards, switches, cables and other material in accordance with SANS 10142-1. Galvanised, alternatively PVC conduit and galvanised fittings shall be provided at all substations within 50km of the coast.

45.2 The contractor shall furnish a certificate of compliance for the 400V/220V AC distribution and lighting of the traction substation signed by the accredited person in terms of SANS 10142-1 and who is registered with "Electrical Contracting Board".

45.3 Complete Layout drawing showing the position/type of light fittings, position of plugs, distribution board and switches to be submitted to Transnet Freight Rail for approval.

45.4 220V AC fluorescent light fittings shall be provided. The minimum lighting requirement shall be 100 lux in terms of the "Occupational Health and Safety Act".

**11KV / 6,6KV TO 400V AUXILIARY SUPPLY AND CHANGE OVER SYSTEM.**

45.5 Where specified a 11kV/6,6kV to 400V distribution transformer will be installed to supply the traction substation in the event of substation failure or when the substation is taken off load.

45.5.1 The 3 phase 400V supply from the above transformer shall be connected to the control circuitry via a automatic change over switching system.

45.5.2 The change over switching system shall be mechanically and electrically interlocked.

45.5.3 Transnet Freight Rail shall supply and install a suitably rated 4core armoured cable from the 11kV/6,6kV to 400V distribution transformer to the change over switching unit.

45.5.4 A 1:1 ratio isolation transformer shall be installed between the 11kV/6.6kV to 400V distribution transformer and change over switching system.

45.5.5 The isolation transformer shall comply with specification BBC 0330.

45.5.6 The successful tenderer shall supply the isolation transformer unless otherwise specified.

**EMERGENCY LIGHTING.**

45.6 Fluorescent light fittings with its own battery back up supply shall be supplied for emergency lighting.

45.6.1 A minimum of three fittings shall be installed in a single unit substation and four in a double unit substation.

45.6.2 The light fittings shall be installed at the following locations:

- In single unit substations two in the main walkway between the control panels and rectifier unit. One flameproof fitting in the battery room
- In a double unit substation three in the main walkway and one flameproof fitting in the battery room.
- In additional locations where requested by the Project Manager/Engineer.

45.6.3 The light switch shall be clearly labelled "EMERGENCY LIGHTNING".

**MOULDED CASE CIRCUIT BREAKERS**

- 45.7 All low voltage circuits and equipment shall be protected by moulded case circuit breakers, which comply with specification SANS 156.
- SECURITY LIGHTS**
- 45.8 Where outdoor security lights are specified 400W high-pressure sodium fittings shall be installed at locations specified by the "Scope of Work".
- 46.0 COOLING AND VENTILATION**
- 46.1 Where specified, 3 phase cooling fans shall be supplied and installed in the substation building.
- 46.2 The required filters, louvres and guards shall be provided and installed.
- 47.0 BATTERY ROOM**
- 47.1 A three/single phase non-sparking extraction fan shall be installed for the battery room.
- 47.2 Only Ex non-sparking light fittings shall be installed in the battery room.
- 47.3 Light switches and plug sockets shall not be installed in the battery room.
- 47.4 No-smoking, naked flames and hand protection warning signs shall be fitted to the battery room doors.
- 47.5 A wooden stand treated with acid proof paint shall be provided for the batteries.
- 47.6 A hydrometer and logbook shall be supplied by the contractor for each installation.
- 47.7 The floor of the battery room shall be painted with acid proof paint.
- 48.0 CLEARING OF SITE**
- 48.1 All rubble which is left over as a direct result of work performed by the Contractor shall be removed from the substation building and yard and disposed of by the Contractor. The substation floors and walls shall be left in a clean condition. All cable, wire and conductor cut-offs and surplus material shall be removed from site.
- SECTION 4: SITE TESTING AND COMMISSIONING**
- 49.0 SITE TESTS AND COMMISSIONING**
- The successful tenderer shall be responsible for carrying out on-site tests and commissioning of all equipment supplied and installed in terms of this specification and the contractual agreement.
- 49.1 ON-SITE TESTS**
- 49.1.1 Functional on-site tests shall be conducted on all items of equipment, circuitry and interlocking to prove the proper functioning and installation thereof.
- 49.1.2 The successful tenderer shall submit a detailed list of on-site tests for the approval of the Project Manager/Engineer at least six weeks before tests are due to commence at the first substation.
- 49.1.3 The successful tenderer shall arrange for the Project Manager/Engineer or his representative to be present to witness the on-site tests at each substation.
- 49.1.4 On-site tests and subsequent commissioning shall not commence until all construction work has been completed. Construction staff, material and equipment shall be removed from site prior to the commencement of testing. Testing and commissioning of the substation equipment will not be allowed to take place in a construction site environment.
- 49.1.5 On-site tests shall include the following;
- Polarity tests on all CT's.
  - Ratio tests on all CT's.
  - Magnetising current of all CT's.
  - Secondary injection of all relays.
  - Trip testing, all relays must be checked for correct operation.

- The functionality of all electrical circuitry must be tested.
- The operation of both mechanical and electrical interlocking.
- Tests on primary circuit breakers and other primary equipment in accordance with manufacturer's instructions.

- 49.1.6 At the completion of the on-site tests the Project Manager/Engineer or his representative, shall either sign the test sheets (supplied by the successful tenderer) as having witnessed the satisfactory completion thereof, or hand to the successful tenderer a list of defects requiring rectification.
- 49.1.7 Upon rectification of defects the successful tenderer shall arrange for the Project manager/Engineer or his representative to certify satisfactory completion of on-site tests for that particular substation.
- 49.1.8 Acceptance by the Project Manager/Engineer of satisfactory completion of on-site tests in no way relieves the contractor of his obligation to rectify defects which may have been overlooked or become evident at a later stage.

## **49.2 COMMISSIONING OF EQUIPMENT**

- 49.2.1 Commissioning will include the energising of equipment from the AC disconnects to the OHTE track feeder switches. The successful tenderer must prove the satisfactory operation of all equipment under live conditions.
- 49.2.2 On completion of commissioning the successful tenderer will hand the substation over to the Project Manager/Engineer in terms of the relevant instructions.
- 49.2.3 Tenderers shall allow a period of at least three days per substation between satisfactory completion of on-site tests and commissioning of equipment.
- 49.2.4 During this period the Transnet Freight Rail's Test staff will test the operation of all protective relays and circuits and set the protection relays at each substation.
- 49.2.5 The contractor shall rectify any faults found during the testing and setting of the protection relays.
- 49.2.6 The final testing of the substation must commence at least three days ahead of the contract completion date.
- 49.2.7 The commissioning of the protection equipment by Transnet Freight Rail will in no way absolve the successful tenderer from any of his responsibilities during the guarantee period. It is the successful tenderers responsibility to satisfy himself that the commissioning of the protection equipment has been carried out in a satisfactory manner and in no way compromises the proper operation of the equipment supplied in terms of the contract.
- 49.2.8 The commissioning dates for the substations will be dependent on the availability of power supplies from the supply utility as well as Transnet Freight Rail's electrification program and will be defined by the Project Manager/Engineer.

## **50.0 SECTION 5: GENERAL QUALITY ASSURANCE**

- 50.1 Transnet Freight Rail reserves the right to carry out inspection and tests on the equipment at the works of the supplier/manufacturer.
- 50.2 Arrangements must be made timeously for such inspections and type/routine tests in accordance with the equipment specifications are carried out before delivery of the equipment to the site.

50.3 Type/routine test sheets of the equipment shall be forwarded to the Project Manager.

## **51.0 GUARANTEE AND DEFECTS**

- 51.1 The contractor shall guarantee the satisfactory operation of the complete electrical installation supplied and installed by him and accept liability for maker's defects, which may appear in design, materials and workmanship.
- 51.2 The guarantee period shall commence from the date of successful commissioning of the substation.
- 51.3 The guarantee period for all substations shall expire after a period of 12 months commencing from the date of successful completion of the contract or the date the equipment is handed over to Transnet Freight Rail whichever is the later.

51.4 If urgent repairs have to be carried out by Transnet Freight Rail staff to maintain supply during the guarantee period the contractor shall inspect such repairs to ensure that the guarantee period is not affected and should they be covered by the guarantee, reimburse Transnet Freight Rail the cost of material and labour.

51.5 The cost of training shall be included in the tenderers quotation.

## **52.0 DRAWINGS, INSTRUCTION MANUALS AND SPARES LISTS**

52.1 Drawings, instruction manuals and catalogues shall be supplied in accordance with Transnet Freight Rail specification CEE.0224.

52.2 The tenderer shall supply three copies of an instruction/maintenance manuals, schematic and wiring diagram.

52.3 The contractor shall submit details of spares required in accordance with Transnet Freight Rail's specification no. CEE.0224.

52.4 All spares recommended for normal maintenance purposes that are not available locally (requires importation) must be highlighted.

## **53.0 SPECIAL TOOLS AND/OR SERVICING AIDS**

Special tools or servicing aids necessary for the efficient maintenance, repair or calibration of the equipment shall be quoted for separately.

## **54.0 TRAINING**

54.1 The contractor shall submit details with the tender of the training courses which will be conducted by the contractor for the training of Transnet Freight Rail maintenance staff in the operation and maintenance of the equipment supplied. The courses shall include theoretical as well as practical tuition. The date and venue of this training course shall be arranged with the Maintenance manager.

## **55.0 PACKAGING AND TRANSPORT.**

55.1 The contractor shall ensure that the equipment be packed in such a manner that it will be protected during handling and transport.

55.2 The contractor shall provide transport for the delivery of the equipment to the site where required.

## **56.0 BIBLIOGRAPHY**

[1] SANS 1019: 2008 Edition 2.5 Standard voltages, currents and insulation levels for electricity supply

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**APPENDIX 1: LIST OF RELEVANT DRAWINGS****DRAWINGS ISSUED WITH THIS SPECIFICATION**

<b>DRAWING NUMBER</b>	<b>DESCRIPTION.</b>
CEE-TDF-0016	Concrete fencing
CEE-TBD-7	Earthing Arrangements Traction Substations.
CEE-TU-41	Negative Return Cable Terminating Box.
CEE-TCK-1	Reactor 1,84mH, 1 500 A. (For reference purposes only)
CEE-TBP-1	Wiring diagram for auto reclosure for HSCB.
CEE-TBP-39	Circuit diagram for auto reclosure for HSCB
CEE-TBP-35	Connection diagram for HSCB and electronic control relay
CEE-TBP-38	Schematic Diagram of 3kV HV Protection.
CEE-TCL-63	3kV Busbar Chamber Arrangement: Cable Feeders.
CEE-TCQ-208	DC High Speed Circuit Breaker Cell Panel (Cell slabs) (sheets 1 to 10)
CEE-TBP-33	DC Track Breaker and Truck Wiring Diagram.
BBB 0938	Surge arresters mounted on traction transformer.
BBB 3620	3kV Earthing arrangement for traction substation
BBF 1615	Busbar connection assembly