



**Transnet freight Rail**, a division of

**TRANSNET SOC LTD**

Registration Number 1990/000900/30

[hereinafter referred to as **Transnet**]

**REQUEST FOR QUOTATION [RFQ] No: ERAC-VYG-21382**

**FOR THE TESTING AND CALIBRATION OF RAILWAY PROTECTION EQUIPMENT AT VRYHEID DEPOT FOR A PERIOD OF 24 MONTHS**

**FOR DELIVERY TO: VRYHEID**

**ISSUE DATE: 24 MAY 2016 TO 01 JUNE 2016**

**COMPULSORY BRIEFING SESSION WILL BE AS FOLLOWS:**

**DATE: 02 JUNE 2016 AT 10AM**

**VENUE: 04 KIEWIET STREET, MALAHLE HOUSE, EMPANGENI (BOARDROOM 214)**

**CLOSING DATE: 14 JUNE 2016**

**CLOSING TIME: 10:00**



#### 4. Legal Compliance

The successful Respondent shall be in full and complete compliance with any and all applicable national and local laws and regulations.

#### 5. Changes to Quotations

Changes by the Respondent to its submission will not be considered after the closing date and time.

#### 6. Pricing

All prices must be quoted in South African Rand on a fixed price basis, excluding VAT.

#### 7. Prices Subject to Confirmation

Prices quoted which are subject to confirmation will not be considered.

#### 8. Binding Offer

Any Quotation furnished pursuant to this Request shall be deemed to be an offer. Any exceptions to this statement must be clearly and specifically indicated.

#### 9. Disclaimers

Transnet is not committed to any course of action as a result of its issuance of this RFQ and/or its receipt of a Quotation in response to it. Please note that Transnet reserves the right to:

- modify the RFQ's goods / service(s) and request Respondents to re-bid on any changes;
- reject any Quotation which does not conform to instructions and specifications which are detailed herein;
- disqualify Quotations submitted after the stated submission deadline;
- not necessarily accept the lowest priced Quotation or an alternative bid;
- reject all Quotations, if it so decides;
- place an order in connection with this Quotation at any time after the RFQ's closing date;
- award only a portion of the proposed goods / service/s which are reflected in the scope of this RFQ;
- split the award of the order/s between more than one Supplier/Service Provider should it at Transnet's discretion be more advantageous in terms of, amongst others, cost or developmental considerations ;
- or
- make no award at all.

Should a contract be awarded on the strength of information furnished by the Respondent, which after conclusion of the contract, is proved to have been incorrect, Transnet reserves the right to cancel the contract.

Transnet reserves the right to award business to the highest scoring bidder/s unless objective criteria justify the award to another bidder.

Transnet reserves the right to conduct Post Tender Negotiations (PTN) with selected Respondents or any number of short-listed Respondents, such PTN to include, at Transnet's discretion, any evaluation criteria listed in the RFQ document.

Should the preferred bidder fail to sign or commence with the contract within a reasonable period after being requested to do so, Transnet reserves the right to award the business to the next highest ranked bidder, provided that he/she is still prepared to provide the required goods at the quoted price.

## 10. Specification/Scope of Work

Reference to Annexure D

## 11. Respondent's Samples

Respondents are not required to submit samples of the Goods tendered for.

## 12. National Treasury Central Supplier Database Registration

In terms of paragraph 5.6 of the NATIONAL TREASURY SCM INSTRUCTION NO 4 OF 2016/2017, which became effective on 1 May 2016, Transnet may only award bids to suppliers after verifying that the supplier is registered as prospective suppliers on the National Treasury Central Supplier Database.

Please follow the following steps to register your company on the National Treasury Central Supplier Database and confirm your registration by submitting your National Treasury "MAAA" supplier reference number.

Step 1: Access the CSD site on <https://secure.csd.gov.za/>

Step 2: Register a new CSD account <https://secure.csd.gov.za/Account/Register>

Step 3: Receive an activation email and click activate account

Step 4: Activate account by requesting and entering the OTP

Step 5: Log in the CSD

Step 6: Complete supplier identification information

Step 7: Complete contact information

Step 8: Complete address information

Step 9: Complete bank account information

Step 10: Complete tax information

Step 11: Complete directors/members information (if non-CIPC company)

Step 12: Complete associations (if relevant)

Step 13: Complete commodities information

Step 14: Complete B-BBEE information (future phase)

Step 15: Maintain users

Step 16: Complete notification information

Step 17: Complete accreditations

Step 18: Click on submit

Step 19: A CSD supplier number and unique registration reference number is auto-generated and communicated

**Transnet urges its clients, suppliers and the general public to report any fraud or corruption to**

**TIP-OFFS ANONYMOUS: 0800 003 056**

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**RFQ FOR THE TESTING AND CALIBRATION OF RAILWAY PROTECTION EQUIPMENT AT  
VRYHEID DEPOT  
CLOSING VENUE: INYANDA HOUSE 1, 21 WELLINGTON ROAD,  
PARKTOWN, GAUTENG  
CLOSING DATE & TIME: 14 JUNE 2016 AT 10AM  
VALIDITY PERIOD: 90 BUSINESS DAYS**

**SECTION 2****EVALUATION CRITERIA AND RETURNABLE DOCUMENTS****1. Evaluation Criteria**

Transnet will utilise the following criteria [not necessarily in this order] in choosing a Supplier/Service Provider, if so required:

<b>Criterion/Criteria</b>	<b>Explanation</b>
<b>Administrative responsiveness</b>	Completeness of response and returnable documents
<b>Substantive responsiveness</b>	Prequalification criteria, if any, must be met and whether the Bid materially complies with the scope and/or specification given. <ul style="list-style-type: none"> <li>All items on the Pricing Schedule should be priced; if not it will result in a bid being disqualified</li> </ul>
<b>Functionality Threshold</b>	As prescribed in terms of the Preferential Procurement Policy Framework Act (PPPFA), Act 5 of 2000 and its Regulations, Respondents are to note that functionality is included as a threshold with a prescribed percentage threshold of 80%. Capacity and ability to meet delivery schedule, machinery to execute project, previous experience, safety and quality plan and qualification of test officer will be considered as part of the technical evaluation[complete Annexure B – Technical Questionnaire]
<b>Final weighted evaluation based on 80/20 preference point</b>	<ul style="list-style-type: none"> <li>Pricing and price basis [firm for twenty four months]</li> <li>B-BBEE status of company - Preference points will be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table indicated in Annexure A: B-BBEE Claim Form.</li> </ul>

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**2. Validity Period**

Transnet desires a validity period of 90 [ninety] Business Days from the closing date of this RFQ.

This RFQ is valid until \_\_\_\_\_.

**3. Disclosure of Prices Quoted**

Respondents must indicate here whether Transnet may disclose their quoted prices and conditions to other Respondents:

YES  NO

**4. Returnable Documents**

**Returnable Documents** means all the documents, Sections and Annexures, as listed in the tables below.

**All Returnable Sections, as indicated in the header and footer of the relevant pages, must be signed, stamped and dated by the Respondent.**

a) Respondents are required to submit with their Quotations the **mandatory Returnable Documents**, as detailed below.

***Failure to provide all these Mandatory Returnable Documents at the Closing Date and time of this RFQ will result in a Respondent's disqualification. Respondents are therefore urged to ensure that all these Documents are returned with their Quotations.***

Please confirm submission of these mandatory Returnable Documents by so indicating [Yes or No] in the tables below:

<b>Mandatory Returnable Documents</b>	<b>Submitted [Yes or No]</b>
SECTION 3 : Quotation Form	
ANNEXURE B : Technical Submission/Questionnaire	
ANNEXURE C : Price Schedule	
ANNEXURE E : Certificate of Attendance	

b) In addition to the requirements of section (a) above, Respondents are further required to submit with their Quotations the following **essential Returnable Documents** as detailed below.

***Failure to provide all these Returnable Documents may result in a Respondent's disqualification. Respondents are therefore urged to ensure that all these documents are returned with their Quotations.***

**Returnable Document**

<b>Essential Returnable Documents</b>	<b>Submitted [Yes or No]</b>
SECTION 2 : Evaluation criteria and list of returnable documents	
- SECTION 4 : RFQ Declaration and Breach of Law Form	
- Valid and original, or a certified copy, of your entity's B-BBEE Verification Certification as per the requirements stipulated in Annexure A: B-BBEE Claims Form Note: failure to provide these required documents at the closing date and time of the RFQ will result in an automatic score of zero being allocated for preference	
- Original valid Tax Clearance Certificate [Consortia / Joint Ventures must submit a separate Tax Clearance Certificate for each party]	
ANNEXURE A – B-BBEE Preference Points Claim Form	
ANNEXURE D – Scope of Services	

**CONTINUED VALIDITY OF RETURNABLE DOCUMENTS**

The successful Respondent will be required to ensure the validity of all returnable documents, including but not limited to its Tax Clearance Certificate and valid B-BBEE Verification Certificate, for the duration of any contract emanating from this RFQ. Should the Respondent be awarded the contract **[the Agreement]** and fail to present Transnet with such renewals as and when they become due, Transnet shall be entitled, in addition to any other rights and remedies that it may have in terms of the eventual Agreement, to terminate such Agreement forthwith without any liability and without prejudice to any claims which Transnet may have for damages against the Respondent.

"PREVIEW COPY ONLY"

**Returnable Document**

**SECTION 3  
QUOTATION FORM**

I/We \_\_\_\_\_  
hereby offer to supply the goods/services at the prices quoted in the Price Schedule below, in accordance with the conditions related thereto.

I/We agree to be bound by those terms and conditions in:

- the Standard RFQ Terms and Conditions for the Supply of Goods or Services to Transnet; and
- any other standard or special conditions mentioned and/or embodied in this Request for Quotation.

I/We accept that unless Transnet should otherwise decide and so inform me/us, this Quotation [and, if any, its covering letter and any subsequent exchange of correspondence], together with Transnet's acceptance thereof shall constitute a binding contract between Transnet and me/us.

I/We further agree that if, after I/we have been notified of the acceptance of my/our Quotation, I/we fail to deliver the said goods/service/s within the delivery lead-time quoted, Transnet may, without prejudice to any other legal remedy which it may have, cancel the order and recover from me/us any expenses incurred by Transnet in calling for Quotations afresh and/or having to accept any less favourable offer.

**Price Schedule**

I/We quote as follows for the goods required, on a "delivered nominated destination" basis, excluding VAT:

**See ANNEXURE C**

**Delivery Lead-Time from date of purchase order:** \_\_\_\_\_ [days/weeks]

**Notes to Pricing:**

- All Prices must be quoted in South African Rand, exclusive of VAT
- To facilitate like-for-like comparison bidders must submit pricing strictly in accordance with this price schedule and not utilise a different format. Deviation from this pricing schedule could result in a bid being disqualified.
- All items to be priced

Please note that should you have offered a discounted price(s), Transnet will only consider such price discount(s) in the final evaluation stage if offered on an unconditional basis.

**By signing this Quotation Form the Respondent is deemed to acknowledge that he/she has made himself/herself thoroughly familiar, and agrees, with all the conditions governing this RFQ, including those contained in any printed form stated to form part hereof, including but not limited to the documents stated below and Transnet SOC Ltd will recognise no claim for relief based on an allegation that the Respondent overlooked any such condition or failed properly to take it into account for the purpose of calculating tendered prices or otherwise:**

\_\_\_\_\_  
Respondent's Signature

\_\_\_\_\_  
Date & Company Stamp



**Returnable Document**

1. Specifications and drawings included in this RFQ - if applicable; and
2. The following documents all of which are available on Transnet's website or upon request:
  - 2.1. General Bid Conditions;
  - 2.2. Standard RFQ Terms and Conditions for the Supply of Goods or Services to Transnet;
  - 2.3. Supplier Integrity Pact;
  - 2.4. Non-disclosure Agreement; and
  - 2.5. Vendor Application Form and all supporting documents (first time vendors only)

Alternatively, for all existing vendors, please provide vendor number(s) here:

Transnet Operating Division	Unique Vendor Number	Yes / No
Transnet Group		
TFR, etc.		

In the Yes/No column above, please confirm that all the information e.g. company address and contact details, banking details etc. are still correct as at the time of allocation of the vendor number(s). Alternatively, Respondents are required to provide the updated information with their bid submission.

SIGNED at \_\_\_\_\_ on this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_

SIGNATURE OF WITNESSES

ADDRESS OF WITNESSES

1 \_\_\_\_\_

Name \_\_\_\_\_

2 \_\_\_\_\_

Name \_\_\_\_\_

SIGNATURE OF RESPONDENT'S AUTHORISED REPRESENTATIVE: \_\_\_\_\_

NAME: \_\_\_\_\_

DESIGNATION: \_\_\_\_\_

**Returnable Document**

**SECTION 4**

**RFQ DECLARATION AND BREACH OF LAW FORM**

NAME OF ENTITY: \_\_\_\_\_

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

1. Transnet has supplied and we have received appropriate responses to any/all questions [as applicable] which were submitted by ourselves for RFQ Clarification purposes;
2. we have received all information we deemed necessary for the completion of this Request for Quotation [RFQ];
3. we have been provided with sufficient access to the existing Transnet facilities/sites and any and all relevant information relevant to the Supply of the Goods as well as Transnet information and Employees, and has had sufficient time in which to conduct and perform a thorough due diligence of Transnet's operations and business requirements and assets used by Transnet. Transnet will therefore not consider or permit any pre- or post-contract verification or any related adjustment to pricing, service levels or any other provisions/conditions based on any incorrect assumptions made by the Respondent in arriving at his Bid Price.
4. at no stage have we received additional information relating to the subject matter of this RFQ from Transnet sources, other than information formally received from the designated Transnet contact(s) as nominated in the RFQ documents;
5. we are satisfied, insofar as our entity is concerned, that the processes and procedures adopted by Transnet in issuing this RFQ and the requirements requested from Bidders in responding to this RFQ have been conducted in a fair and transparent manner; and
6. furthermore, we declare that a family, business and/or social relationship **exists / does not exist** [delete as applicable] between an owner / member / director / partner / shareholder of our entity and an employee or board member of the Transnet Group including any person who may be involved in the evaluation and/or adjudication of this Bid.
7. In addition, we declare that an owner / member / director / partner / shareholder of our entity **is / is not** [delete as applicable] an employee or board member of the Transnet Group.
8. If such a relationship as indicated in paragraph 6 and/or 7 exists, the Respondent is to complete the following section:

FULL NAME OF OWNER/MEMBER/DIRECTOR/  
PARTNER/SHAREHOLDER:

ADDRESS:

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

Indicate nature of relationship with Transnet:

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

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

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

**BREACH OF LAW**

10. We further hereby certify that I/we **have/have not been** [delete as applicable] 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 Respondent is required to disclose excludes relatively minor offences or misdemeanours, e.g. traffic offences. This includes the imposition of an administrative fine or penalty.

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

NATURE OF BREACH:

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

DATE OF BREACH: \_\_\_\_\_

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

SIGNED at \_\_\_\_\_ on this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_

For and on behalf of _____ duly authorised hereto	AS WITNESS:
Name:	Name:
Position:	Position:
Signature:	Signature:
Date:	Registration No of Company/CC _____
Place:	Registration Name of Company/CC _____

**Returnable Document****RFQ FOR THE TESTING AND CALIBRATION OF RAILWAY PROTECTION EQUIPMENT AT  
VRYHEID DEPOT  
FOR A PERIOD OF 24 MONTHS****ANNEXURE A: B-BBEE PREFERENCE POINTS CLAIM FORM**

This preference form contains general information and serves as a claim for preference points for Broad-Based Black Economic Empowerment [**B-BBEE**] Status Level of Contribution.

**1. INTRODUCTION**

- 1.1 A total of 20 preference points shall be awarded for B-BBEE Status Level of Contribution.
- 1.2 Failure on the part of a Bidder to fill in and/or to sign this form and submit a B-BBEE Verification Certificate from a Verification Agency accredited by the South African Accreditation System [**SANAS**] or a Registered Auditor approved by the Independent Regulatory Board of Auditors [**IRBA**] or an Accounting Officer as contemplated in the Close Corporation Act [**CCA**] together with the bid will be interpreted to mean that preference points for B-BBEE Status Level of Contribution are not claimed.
- 1.3 Transnet 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 Transnet.

**2. GENERAL DEFINITIONS**

- 2.1 "**all applicable taxes**" include value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies;
- 2.2 "**B-BBEE**" means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- 2.3 "**B-BBEE status 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;
- 2.4 "**Bid**" means a written offer in a prescribed or stipulated form in response to an invitation by Transnet for the provision of goods, works or services;
- 2.5 "**Broad-Based Black Economic Empowerment Act**" means the Broad-Based Black Economic Empowerment Act, 2003 [Act No. 53 of 2003];
- 2.6 "**comparative price**" means the price after the factors of a non-firm price and all unconditional discounts that can utilised have been taken into consideration;
- 2.7 "**consortium or joint venture**" means an association of persons for the purpose of combining their expertise, property, capital, efforts, skills and knowledge in an activity for the execution of a contract;
- 2.8 "**contract**" means the agreement that results from the acceptance of a bid by Transnet;

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- 2.9 **"EME"** means any enterprise with an annual total revenue of R5 [five] million or less as per the 2007 version of the B-BBEE Codes of Good Practice and means any enterprise with an annual total revenue of R10 [ten] million or less as per the Revised Codes of Good Practice issued on 11 October 2013 in terms of Government Gazette No. 36928;
- 2.10 **"firm price"** means the price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs and excise duty and any other duty, levy, or tax, which, in terms of the law or regulation, is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract;
- 2.11 **"functionality"** means the measurement according to predetermined norms, as set out in the bid documents, of a service or commodity that is designed to be practical and useful, working or operating, taking into account, among other factors, the quality, reliability, viability and durability of a service and the technical capacity and ability of a bidder;
- 2.12 **"non-firm prices"** means all prices other than "firm" prices;
- 2.13 **"person"** includes reference to a juristic person;
- 2.14 **"QSE"** means any enterprise with an annual total revenue between R5 [five] million and R35 [thirty five] million as per the 2007 version of the B-BBEE Codes of Good Practice and means any enterprise with an annual total revenue of between R10 [ten] million and R50 [fifty] million as per the Revised Codes of Good Practice issued on 11 October 2013 in terms of Government Gazette No. 36928
- 2.15 **"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;
- 2.16 **"subcontract"** means the primary contractor's assigning or leasing or making out work to, or employing another person to support such primary contractor in the execution of part of a project in terms of the contract;
- 2.17 **"total revenue"** bears the same meaning assigned to this expression in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Empowerment Act and promulgated in the Government Gazette on 9 February 2007;
- 2.18 **"trust"** means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person; and
- 2.19 **"trustee"** means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.

**3. ADJUDICATION USING A POINT SYSTEM**

- 3.1 The Bidder obtaining the highest number of total points for the evaluation criteria as enumerated in Section 2 of the RFP will be awarded the contract, unless objective criteria justifies the award to another bidder.
- 3.2 Preference points shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts.
- 3.3 Points scored will be rounded off to 2 [two] decimal places.

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- 3.4 In the event of equal points scored, the Bid will be awarded to the Bidder scoring the highest number of preference points for B-BBEE.
- 3.5 However, when functionality is part of the evaluation process and two or more Bids have scored equal points including equal preference points for B-BBEE, the successful Bid will be the one scoring the highest score for functionality.
- 3.6 Should two or more Bids be equal in all respect, the award shall be decided by the drawing of lots.

**4. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTION**

- 4.1 In terms of the Preferential Procurement Regulations, 2011, preference points shall be awarded to a Bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of Points [Maximum 20]
1	20
2	18
3	16
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

- 4.2 Bidders who qualify as EMEs in terms of the 2007 version of the Codes of Good Practice must submit a certificate issued by an Accounting Officer as contemplated in the CCA or a Verification Agency accredited by SANAS or a Registered Auditor. Registered auditors do not need to meet the prerequisite for IRBA's approval for the purpose of conducting verification and issuing EME's with B-BBEE Status Level Certificates.
- 4.3 Bidders who qualify as EMEs in terms of the Revised Codes of Good Practice issued on 11 October 2013 in terms of Government Gazette No. 36928 are only required to obtain a sworn affidavit on an annual basis confirming that the entity has an Annual Total Revenue of R10 million or less and the entity's Level of Black ownership.
- 4.4 In terms of the 2007 version of the Codes of Good Practice, Bidders other than EMEs must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating issued by a Registered Auditor approved by IRBA or a Verification Agency accredited by SANAS.
- 4.5 The Department of Trade and Industry recently revised the Codes of Good Practice on 11 October 2013 [Government Gazette No. 36928]. The Revised Codes will replace the Black Economic Empowerment Codes of Good Practice issued on 9 February 2007. The Revised Codes provide for a transitional period ending 30 April 2015. During the transitional period, companies may elect to be measured in terms of the Revised Codes or the 2007 version of the Codes. Companies which are governed by Sector-specific Codes will be measured in terms of those Sector Codes.



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- 4.6 As such, Transnet will accept B-BBEE certificates issued based on the Revised Codes. Transnet will also continue to accept B-BBEE certificates issued in terms of the 2007 version of the Codes provided it was issued before 1 May 2015. Thereafter, Transnet will only accept B-BBEE certificates issued based on the Revised Codes.
- 4.7 In terms of the Revised Codes of Good Practice, Bidders who qualify as QSEs must comply with all the elements of B-BBEE for the purposes of measurement. QSEs that are at least 51% or 100% Black owned are only required to obtain a sworn affidavit on an annual basis confirming that the entity has an Annual Total Revenue of R50 million or less and the entity's Level of Black ownership. Large enterprises must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating issued by a Registered Auditor approved by IRBA or a Verification Agency accredited by SANAS.
- 4.8 A trust, consortium or joint venture will qualify for points for its B-BBEE status level as a legal entity, provided that the entity submits its B-BBEE status level certificate.
- 4.9 A trust, consortium or joint venture will qualify for points for their B-BBEE status level as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate bid.
- 4.10 Tertiary institutions and public entities will be required to submit their B-BBEE status level certificates in terms of the specialised scorecard contained in the B-BBEE Codes of Good Practice.
- 4.11 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 subcontracting more than 25% [twenty-five per cent] of the value of the contract to any other enterprise that does not qualify for at least the same number of points that such a Bidder qualifies for, unless the intended subcontractor is an EME that has the capability and ability to execute the subcontract.
- 4.12 A person awarded a contract may not subcontract more than 25% [twenty-five per cent] 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 subcontracted to an EME that has the capability and ability to execute the subcontract.
- 4.13 Bidders are to note that in terms of paragraph 2.6 of Statement 000 of the Revised Codes of Good Practice issued on 11 October 2013 in terms of Government Gazette No. 36928, any representation made by an entity about its B-BBEE compliance must be supported by suitable evidence or documentation. As such, Transnet reserves the right to request such evidence or documentation from Bidders in order to verify any B-BBEE recognition claimed.

**5. B-BBEE STATUS AND SUBCONTRACTING**

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

B-BBEE Status Level of Contributor \_\_\_\_\_ = \_\_\_\_\_ [maximum of 20 points]

Note: Points claimed in respect of this paragraph 5.1 must be in accordance with the table reflected in paragraph 4.1 above and must be substantiated by means of a B-BBEE certificate issued by a Verification Agency accredited by SANAS or a Registered Auditor approved by IRBA or a sworn affidavit in the case of an EME or QSE.

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**5.2 Subcontracting:**

Will any portion of the contract be subcontracted? YES/NO [delete which is not applicable]

If YES, indicate:

- (i) What percentage of the contract will be subcontracted? .....%
- (ii) The name of the subcontractor .....
- (iii) The B-BBEE status level of the subcontractor .....
- (iv) Is the subcontractor an EME? YES/NO

**5.3 Declaration with regard to Company/Firm**

- (i) Name of Company/Firm.....
- (ii) VAT registration number.....
- (iii) Company registration number.....
- (iv) Type of Company / Firm [TICK APPLICABLE BOX]
  - Partnership/Joint Venture/Consortium
  - One person business/sole propriety
  - Close Corporations
  - Company (Pty) Ltd
- (v) Describe Principal Business Activities  
.....  
.....
- (vi) Company Classification [TICK APPLICABLE BOX]
  - Manufacturer
  - Supplier
  - Professional Service Provider
  - Other Service Providers, e.g Transporter, etc
- (vii) Total number of years the company/firm has been in business.....

**BID DECLARATION**

I/we, the undersigned, who warrants that he/she is duly authorised to do so on behalf of the company/firm, certify that points claimed, based on the B-BBEE status level of contribution indicated in paragraph 4 above, qualifies the company/firm for the preference(s) shown and I / we acknowledge that:

- (i) The information furnished is true and correct.
- (ii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 6 above, the contractor may be required to furnish documentary proof to the satisfaction of Transnet that the claims are correct.
- (iii) If the B-BBEE status level of contribution has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, Transnet 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;



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- (d) restrict the Bidder or contractor, its shareholders and directors, and/or associated entities, or only the shareholders and directors who acted in a fraudulent manner, from obtaining business from Transnet for a period not exceeding 10 years, after the *audi alteram partem* [hear the other side] rule has been applied; and/or
- (e) forward the matter for criminal prosecution.

**WITNESSES:**

- 1. ....
- 2. ....

SIGNATURE OF BIDDER
---------------------

DATE:.....

COMPANY NAME: .....

ADDRESS:.....

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**ANNEXURE B - TECHNICAL SUBMISSION FOR PROTECTION TESTING ON ELECTRICAL EQUIPMENT**

**1. TECHNICAL SCORING SCALE**

<b>Quality criteria</b>	<b>Sub-criteria</b>
<b>Capacity to meet delivery schedule</b>	<ul style="list-style-type: none"><li>• Submit a breakdown of team</li></ul>
<b>Machinery to execute project</b>	<ul style="list-style-type: none"><li>• Submit a comprehensive file of approved or similar test equipment</li><li>• Submit a file containing latest/valid calibration certificate</li></ul>
<b>Previous Experience</b>	<ul style="list-style-type: none"><li>• Relevance of experience on traction substations(projects specific)</li></ul>
<b>Safety and quality plan</b>	<ul style="list-style-type: none"><li>• Submit a comprehensive safety and quality plan</li></ul>
<b>Qualification of Test Officer</b>	<ul style="list-style-type: none"><li>• Submit file containing required qualification</li></ul>

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**Returnable Document****2. TECHNICAL QUESTIONNAIRE**

<b>QUALITY CRITERIA</b>	<b>SUB-CRITERIA</b>	<b>Yes Tick (Submit Proof)</b>	<b>No Tick</b>
<b>1</b>			
<b>Capacity to meet delivery schedule</b>	<ul style="list-style-type: none"> <li>Submit a breakdown of team to perform test work. Team should include one test officer</li> </ul>		
	<ul style="list-style-type: none"> <li>Availability of staff to do testing once notified</li> </ul>	Supplier to confirm Response time in days	
<b>2</b>		<b>Yes Tick (Submit Proof)</b>	<b>No Tick</b>
<b>Machinery to execute project</b>	<ul style="list-style-type: none"> <li>Submit a comprehensive file of approved or similar test equipment</li> </ul>		
	<ul style="list-style-type: none"> <li>Submit latest/valid calibration certificate for test equipment</li> </ul>		
<b>3</b>		<b>Yes Tick (Submit Proof)</b>	<b>No Tick</b>
<b>Previous Experience</b>	<ul style="list-style-type: none"> <li>Indicate number of years and proof in protection testing on electrical equipment/Traction substations</li> </ul>		
<b>4</b>		<b>Yes Tick (Submit Proof)</b>	<b>No Tick</b>
<b>Safety and quality plan</b>	<ul style="list-style-type: none"> <li>Submit a comprehensive safety and quality plan that needs to comprise of the following; <ul style="list-style-type: none"> <li>Safety and Quality File</li> <li>Contract Specific / Related Quality Plan</li> <li>Safe Work Method Statement and Risk assessment (Project Specific)</li> <li>SHE Management System</li> <li>Safe Working Procedure and Safe Operating Procedure for Equipment (Project Specific)</li> </ul> </li> </ul>		
<b>5</b>		<b>Yes Tick (Submit Proof)</b>	<b>No Tick</b>
<b>Qualification of Test Officer</b>	<ul style="list-style-type: none"> <li>Submit file containing required qualification for the test officer to execute the Project (Minimum NTC 6)</li> </ul>		

Respondent's Signature

Date &amp; Company Stamp

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**RFQ FOR THE TESTING AND CALIBRATION OF RAILWAY PROTECTION EQUIPMENT AT  
VRYHEID DEPOT  
FOR A PERIOD OF 24 MONTHS  
ANNEXURE C: PRICE SCHEDULE**

**A) The following equipment needs to be tested at all 25 kV traction substations.**

- Primary Circuit Breaker ( 88 kV) -Test sheet 1 or 2
- Incomer 25 kV -Test sheet 3
- Track Breaker 25 kV Impedance relays -Test sheet 4
- Track Breaker 25 kV Thermal relays -Test sheet 5
- Buscoupler 25 kV -Test sheet 6
- Earthing -Test sheet 7
- Speed tests on 25 kV VCB's -Test sheet 8
- 11 KV. Pole mounted VCB. -Test sheet 9
- P & L Sub -Test sheet 10
- Protecta relay -BBF 8996 Ver 2
- Speed test on 88 kv breakers -BBF 8998 Ver 2

**The following 25 kV substations need to be tested. The tenderer should insert his prices and the testing period under the appropriate headings**

	<b>25 kV SUBSTATION</b>	<b>TESTING PERIOD OFFERED</b>	<b>PRICE COMPLETE (excluding VAT)</b>
A1	<b>Moolman.</b> Double unit. 9 Breakers. 4 protecta 2 CDG O/C, 2 Reverse power,1 O/L, 1 O/V 4 restr. E/F, 2 Transformer Flag-trip relays, 2 CDG. O/C. 2 SF 6 trip. Earth reading & integrity.		R
A2	<b>Hlungwana.</b> Double unit. 9 Breakers. 1 protecta 3 YTG. 3 thermal. 2 CDG O/C, 2 Reverse power, 1 o/l, 1 o/v 4 restr. E/F, 2 Transformer Flag-trip relays, 2 CDG. O/C. 2 SF 6 trip. Earth reading & integrity.		R
A3	<b>DUMBE.</b> Single unit 3 Breakers. 1 Optimho, 1 thermal. 1 MCGG O/C. 1 reverse power. 1 KCGG O/C. 1 differential relay. 2 restr. E/F. 1 MVAA transf. Flag trip. 1 SF6 trip. 1 earth test.		R
A4	<b>Mqwabe.</b> Double unit. 9 Breakers. 4 YTG`s 4 thermal. 2 CDG O/C, 2 Reverse power,1 O/L,1O/V 4 restr. E/F, 2 Transformer Flag-trip relays, 2 CDG. O/C. 2 SF 6 trip. Earth reading & integrity.		R
A5	<b>Sikame.</b> 10 Breakers. 4 YTG`s 4 thermal. 2 CDG O/C, 2 Reverse power,1 O/L, 1 O/V 4 restr. E/F, 2 Transformer Flag-trip relays, 2 CDG. O/C. 2 SF 6 trip. Earth reading & integrity.		R
	<b>Wildrand.</b> Double unit. 9 Breakers. 4 protecta 2 CDG O/C, 2 Reverse power,1 O/L, 1 O/V 4 restr. E/F, 2 Transformer Flag-trip relays, 2 CDG. O/C. 2 SF 6 trip. Earth reading & integrity.		R
A6	<b>Iswepe.</b> Double unit. 9 Breakers. 4 protecta 2 CDG O/C, 2 Reverse power,1 O/L, 1 O/V 4 restr. E/F, 2 Transformer Flag-trip relays, 2 CDG. O/C. 2 SF 6 trip. Earth reading & integrity.		R
<b>A</b>	<b>SUBTOTAL</b>		<b>R</b>

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**B) The following equipment needs to be tested at Vryheid East track sectioning station only.**

- Impedance relays -Test sheet 4
- Thermal relays -Test sheet 5
- Buscoupler -Test sheet 6
- Earthing -Test sheet 7
- Speed tests -Test sheet 8

	TRACK SECTIONING STATION	TESTING PERIOD OFFERED	PRICE COMPLETE (excluding VAT)
B1	<b>VRYHEID EAST.</b> 5 breakers. 4 YTG`s 4 thermal. 1 O/L, 1 O/V. Earth reading & integrity		R
<b>B</b>	<b>SUBTOTAL</b>		R

**C) The following equipment needs to be tested at all single breaker track sectioning stations.**

- Thermal relays -Test sheet 5
- Earthing -Test sheet 7
- Speed tests -Test sheet 8

	TRACK SECTIONING STATION	TESTING PERIOD OFFERED	PRICE COMPLETE (excluding VAT)
C1	<b>Piet Retief.</b> 1 Breaker. 1 thermal. CAG instantaneous O/L	1	R
C2	<b>Hlelo river.</b> 1 Breaker. 1 thermal. instantaneous O/L	1 CAG	R
C3	<b>Sheepmoor.</b> 1 Braeker1 thermal. instantaneous O/L	1 CAG	R
<b>C</b>	<b>SUB TOTAL</b>		R

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**D) The following transmission line infeed points and 11 kV substations need to be tested.  
(See test sheet BBB0346)**

	<b>SUB STATION OR TRANSMISSION LINE INFEEED POINT</b>	<b>TESTING PERIOD OFFERED</b>	<b>PRICE COMPLETE (excluding VAT)</b>
D1	<b>Iswepe infeed.</b> 4 Breakers. 3 Siemens relays. 1 ABB O/C . E/F. 1 Ttransformer flag trip		R
D2	<b>Hlungwana infeed.</b> 4 Breakers. 1 Asea O/C. E/F. 1 Transformer flag trip. 3 Siemens relays.		R
D3	<b>Vryheid Main sub.</b> 8 Breakers. 7 Siemens relays. 1 Frame leakage 2 Solkor. 2 Transformer flag trip relays.		R
D4	<b>Vryheid works insp.</b> 5 Breakers. 2 Solkor. 4 Siemens. 1 Frame leakage. 2 Transf. trip		R
D5	<b>Vryheid Yard sub.</b> 5 Breakers. 2 Solkor. 4 Siemens. 1 Frame leakage. 2 Transf. Trip		R
D6	<b>Vryheid Admin sub.</b> 5 Breakers. . 2 Solkor. 4 Siemens. 1 Frame leakage. 2 Transf. Trip		R
D7	<b>Vryheid CTC sub.</b> 6 Breakers. . 2 Solkor. 4 Siemens. 1 Frame leakage. 2 Transf. Trip		R
D8	<b>Vryheid Dieseldepot sub.</b> 5 Breakers. . 2 Solkor. 4 Siemens. 1 Frame leakage. 2 Transf. Trip.		R
<b>D</b>	<b>SUB TOTAL</b>		<b>R</b>

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**E) The following pole mounted reclosers need to be tested. (See test sheet for McGraw-Edison Reclosers)**

	TRANSMISSION LINE INFEEED POINT	TESTING PERIOD OFFERED	PRICE COMPLETE (excluding VAT)
E1	MOOLMAN infeed		R
E2	PaulPietburg infeed		R
E3	Kemp infeed		R
E4	Iswepe infeed		R
<b>E</b>	<b>SUBTOTAL</b>		<b>R</b>

<b>A-E</b>	<b>TOTAL FOR THE ABOVE TESTING</b>		<b>R</b>
------------	------------------------------------	--	----------

**F) Accommodation and traveling costs for the above testing period only**

F1	Accommodation cost per night per team	R	/night
F2	Total Traveling cost per night per team	R	/km
F3	Unit rate for minor repair work	R	/Hour

**G) Accommodation and traveling costs for the next twenty four months to do as and when require work between Sheepmoor and Vryheid.**

G1	Accommodation cost per night	R	/night
G2	Traveling cost per km	R	/km
G3	Unit rate for as and when require work	R	/Hour

Respondent's Signature

Date &amp; Company Stamp

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**RFQ FOR THE TESTING AND CALIBRATION OF RAILWAY PROTECTION EQUIPMENT AT  
VRYHEID DEPOT  
FOR A PERIOD OF 24 MONTHS**

**ANNEXURE D: SCOPE OF SERVICES**

1. Scope of work.

This specification calls for :-

- 1) The complete testing of all electrical protection relays, CTs, VTs , speed tests of breakers, substation earthing and other related protection equipment at traction and distribution substations between Sheepmoor and Vryheid.
- 2) Minor repair work and re-testing where faulty equipment is identified during the above testing period. (Transnet Freight Rail will supply all material required for these repairs)
- 3) Testing and minor repair work (as and when required) at any substation between Sheepmoor and Vryheid for the next 24 months when ever protection equipment is found to be faulty or suspect. (Transnet Freight Rail will supply all material required for these repairs)

On completion of a test, the contractor will be required to fill in a test sheet as supplied in the annexures.

Tenderers are required to complete the price and time schedules for the activities listed below. Failure to complete these schedules in full will result in the offer not being considered.

A technician from Transnet Freight Rail will provide access to the substations and will isolate all equipment before handing it over for testing purposes. No work shall be done in any substation without the presence of a Transnet Freight Rail representative.

The technician who will assist during the contract is based in Vryheid or Piet Retief from where they will depart and escort the contractor every morning.

Tenderers are to provide a copy of the latest certificate of calibration for all testing equipment to be used during the contract.

Any uncertainties will be discussed at the site meeting.

**All technical related queries must be referred to the manager of the contract.**



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**RFQ FOR THE TESTING AND CALIBRATION OF RAILWAY PROTECTION EQUIPMENT AT VRYHEID DEPOT**

**ANNEXURE E: CERTIFICATE OF ATTENDANCE OF RFQ BRIEFING SESSION**

It is hereby certified that –

1. \_\_\_\_\_

2. \_\_\_\_\_

Representative(s) of \_\_\_\_\_ [name of entity]

attended the RFQ briefing in respect of the proposed Goods to be supplied in terms of this RFQ on

\_\_\_\_\_ 20\_\_

\_\_\_\_\_  
TRANSNET'S REPRESENTATIVE

\_\_\_\_\_  
RESPONDENT'S REPRESENTATIVE

DATE \_\_\_\_\_

DATE \_\_\_\_\_

EMAIL \_\_\_\_\_

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**RFQ FOR THE TESTING AND CALIBRATION OF RAILWAY PROTECTION EQUIPMENT AT VRYHEID DEPOT**

**ANNEXURE F: TEST SHEETS**

Test sheet 1

**25kV SUBS  
PRIMARY CIRCUIT BREAKER (OLD SUBS - ELECT MECH RELAYS)**

SUBSTATION: \_\_\_\_\_ REFERENCE No: \_\_\_\_\_

PANEL No: \_\_\_\_\_ CB No: \_\_\_\_\_ DESIGNATION: \_\_\_\_\_

**CURRENT TRANSFORMER**

**CT DATA**

	MAKE	RATIO	VA	CLASS
REF PRI.	GEC	300/1		X
REF SEC.	GEC	800/1		X
WINDING TEMP.	GEC	800/5	15	5
I.D.M.T.				

**CT MAGNETISATION CHARACTERISTICS**

REF PRI.			REF SEC.			WINDING TEMP.		I.D.M.T.	
V	I(1AS1-2)	I(2AS1-2)	V	I(1aS1-2)	I(3aS1-2)	V	I	V	I
200			300			5		400	
250			350			10		450	
300			400			15		500	
350			450			20		550	

**RELAY**

RELAY TYPE: CDG \_\_\_\_\_ SER. No: \_\_\_\_\_

RATING: 1AMP PMS: \_\_\_\_\_ TMS: \_\_\_\_\_

RELAY CALIBRATED: 2 x \_\_\_\_\_ = \_\_\_\_\_ A

OPERATING TIME : \_\_\_\_\_ SEC

CT CONNECTED IN \_\_\_\_\_ PH.

AMMETER: 1A/ \_\_\_\_\_

MULTIPLE OF P.S.	O/L	
	AMPS	mSEC

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**25 kV SUBSTATIONS**

REF RELAYS

PRIMARY

SERIAL No.	SETTING	OPERATING VOLTAGE

SECONDARY

VOLTAGE ON RELAY WITH FAULT CONDITION: YES / NO      STABILITY TEST: YES / NO

**POLE DISAGREEMENT RELAY ( VIT)**    SER. No: \_\_\_\_\_    TIME SETTING: \_\_\_\_\_

OPERATION: \_\_\_\_\_

FLAG OPERATION OF RELAYS: \_\_\_\_\_

CB TRIPS VCB: YES / NO

OPERATION OF MAIN AND BACKUP TRIP CIRCUIT (REF & O/C) : YES/ NO

OPERATION OF UTR (VAJ) FROM MAIN TRIP CIRCUIT: YES / NO

**OCB TRIP COUNTER OPERATION** : YES / NO    READING: \_\_\_\_\_

**TRANSFORMER** IMAGE COIL: INJECT 5A TO CHECK OPERATION : YES / NO

BUCHOLTZ RELAY TRIPS OCB WHEN \_\_\_\_\_ AIR IS INJECTED

OIL TEMP. INDICATOR SET TO TRIP AT \_\_\_\_\_ C WHICH CORRESPONDS \_\_\_\_\_ C

ACTUAL TEMP. WINDING TEMP. TRIPS THE OCB AT \_\_\_\_\_

CHECK LOW OIL LEVEL ALARM: \_\_\_\_\_ PRESSURE RELIEF TRIP CCT: \_\_\_\_\_

SILICA GEL: \_\_\_\_\_ % BLUE

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

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Test Sheet 2

**25kV SUBS**  
**PRIMARY CIRCUIT BREAKER (NEW SUBS - ELECTRONIC RELAYS)**

SUBSTATION \_\_\_\_\_  
 PANEL NO. \_\_\_\_\_ CB NO. \_\_\_\_\_ DESIGNATION \_\_\_\_\_  
 CT. DATA:

<u>HV. O/C</u> <u>1A2S1-1A2S2</u>		<u>HV. DIFF.</u> <u>1A1S1-1A1S2</u>		<u>Lv.DIFF.</u> <u>1a1S1-1a1S2</u>		<u>HV. REF.</u> <u>2A1S1-2A1S2</u>		<u>HV REF.</u> <u>2A2S1-2A2S2</u>	
RATIO:		RATIO:		RATIO:		RATIO:		RATIO:	
CLASS:		CLASS:		CLASS:		CLASS:		CLASS:	
V	I	V	I	V	I	V	I	V	I

<u>LV REF.</u> <u>2a1S1-2a1S2</u>		<u>LV REF.</u> <u>1a9S1-1a9S2</u>		<u>WIND. TEMP</u> <u>2a9S1-2a9S2</u>	
RATIO:		RATIO:		RATIO:	
CLASS:		CLASS:		CLASS:	
V	I	V	I	V	I

RELAY: TYPE: \_\_\_\_\_ SER. NO. \_\_\_\_\_ PURPOSE: \_\_\_\_\_  
 RELAY: TYPE: \_\_\_\_\_ SER. NO. \_\_\_\_\_ PURPOSE: \_\_\_\_\_

**FLAG OPERATION OF RELAYS:** \_\_\_\_\_  
**OPERATION OF MAIN AND BACKUP TRIP CIRCUIT (DIFF, REF & O/C):** \_\_\_\_\_  
**OPERATION OF UTR FROM MAIN TRIP CIRCUIT:** \_\_\_\_\_  
**CB TRIP COUNTER:** \_\_\_\_\_ OPERATION: \_\_\_\_\_ READING: \_\_\_\_\_

**TRANSFORMER:**  
**BUCHOLTZ RELAY TRIPS CB WHEN:**  
 \_\_\_\_\_

OIL TEMP. INDICATOR SET TO TRIP AT \_\_\_\_\_ °C WHICH CORRESPONDS \_\_\_\_\_ °C ACTUAL TEMP.  
 WINDING TEMP. TRIPS CB AT \_\_\_\_\_ °C CHECK: LOW OIL LEVEL ALARM: \_\_\_\_\_  
 PRESSURE RELIEF TRIP CB: \_\_\_\_\_ SILICA GEL COLOUR: \_\_\_\_\_ (±% BLUE)

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

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Test Sheet 3

**25kV INCOMER**

SUBSTATION: \_\_\_\_\_ REFERENCE No: 40/0/6/ \_\_\_\_\_

PANEL No: \_\_\_\_\_ CB No: \_\_\_\_\_ DESIGNATION: \_\_\_\_\_

**CURRENT TRANSFORMER**

**CT DATA**

I.D.M.T. MAX DEMAND	MAKE	RATIO	VA	CLASS

**CT MAGNETISATION CHARACTERISTICS**

I.D.M.T.

MAX DEMAND

MAX DEMAND TO BE CHECKED

WITH CONTROL

V	I
250	
300	
350	
400	
450	

V	I
3	
4	
5	
6	

I CT	I HT	I CONT	V VT	V HT	V CONT

**RELAY**

TYPE:CDG \_\_\_\_\_  
 RMS: \_\_\_\_\_

SER. No: \_\_\_\_\_  
 TMS: \_\_\_\_\_

RATING:1 AMP

MULTIPLE OF P.S	AMPS	O/L mSEC
2		
4		
6		
8		
10		

RELAY CALIBRATED : 2 x \_\_\_\_\_ = \_\_\_\_\_ A

OPERATING TIME : \_\_\_\_\_ SEC

**REVERSE POWER RELAY (WDG)**

SER No: \_\_\_\_\_ PMS: \_\_\_\_\_ W TMS: \_\_\_\_\_ OPERATION: \_\_\_\_\_

FLAG OPERATION OF RELAYS: \_\_\_\_\_

RELAY TRIPS CB: \_\_\_\_\_

**CB TRIP COUNTER** OPERATION: \_\_\_\_\_ READING: \_\_\_\_\_

AMMETER: 1A / \_\_\_\_\_ VOLTMETER: 110V/ \_\_\_\_\_

**EARTHING** REFERENCE: \_\_\_\_\_ SUBMODULE: \_\_\_\_\_

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

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Test Sheet 4

**25kV TRACK BREAKER**  
**YTG 14/ OPTIMHO & ARC**

SUBSTATION: \_\_\_\_\_ REFERENCE No: \_\_\_\_\_

PANEL No: \_\_\_\_\_ CB No.: \_\_\_\_\_ DESIGNATION: \_\_\_\_\_

**CURRENT TRANSFORMER**

**CT MAGNETISATION CHARACTERISTICS**

**CT DATA**

V	I

MAKE: \_\_\_\_\_  
 VA: \_\_\_\_\_  
 RATIO: \_\_\_\_\_  
 CLASS: \_\_\_\_\_

**RELAY**

RELAY SERIAL No: \_\_\_\_\_

RELAY SETTINGS: K1=1 K2=3.5 K3=3.5 K4=1 K5=32 K8=1 &1  
 ANGLE 1 & 2 = 65 DEGREES T1 & T2 = MINIMUM

USING A ZERO TEST SET. THE RELAY WAS TESTED AND OPERATES AS SHOWN IN THE TABLE BELOW.:

ZONE	FAULT IMPEDENCE		CALCULATED OPERATING %	ACTUAL OPERATING %	RELAY OPERATING TIME (mSEC)	FLAGS
	X	R				
ZONE1	6	10	65 %			
ZONE2	6	14	85%			
ZONE3	6	14	85%			
Z3 REV.	6	14	2.4%			

MEMORY ACTION: \_\_\_\_\_ DIRECTIONAL ACTION: \_\_\_\_\_ INSTANT TRIP CCT: \_\_\_\_\_

AUTO RECLOSE RELAY: (VAR. 22) SERIAL No: \_\_\_\_\_

AUTO RECLOSE AND LOCKOUT OPERATION : \_\_\_\_\_

TRIP COUNTER OPERATION : \_\_\_\_\_ READING : \_\_\_\_\_

CB TRIP COUNTER OPERATION : \_\_\_\_\_ READING: \_\_\_\_\_

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

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Test Sheet 5

**25 kV TRACK BREAKER**  
**THERMAL RELAY**

SUBSTATION: \_\_\_\_\_ REFERENCE No.: \_\_\_\_\_

PANEL No: \_\_\_\_\_ CB No: \_\_\_\_\_ DESIGNATION : \_\_\_\_\_

**CURRENT TRANSFORMER**

**CT MAGNETISATION CHARACTERISTICS**

V	I
250	
300	
350	
400	
450	

**CT DATA**

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

VA: \_\_\_\_\_

RATIO: \_\_\_\_\_

CLASS: \_\_\_\_\_

**RELAY**

TYPE: \_\_\_\_\_ SERIAL No: \_\_\_\_\_ RATING: \_\_\_\_\_

TAP SELECTED: \_\_\_\_\_ % LOAD TO TRIP: \_\_\_\_\_ %

SET % LOAD TO TRIP AT 115% AND INJECT  $2 \times I_r \times \frac{\% \text{TAP}}{100} = 2 \text{ AMP}$

RELAY TRIPPING TIME: \_\_\_\_\_ SEC.

RELAY TRIPS CB: YES/NO FLAG OPERATION: YES/NO

REDUCE CURRENT TO  $1 \times I_r \times \frac{\% \text{TAP}}{100} = 1 \text{ AMP}$

RUNNING LOAD INDICATES: \_\_\_\_\_ % RESET RELAY TO: \_\_\_\_\_ %

**CB TRIP COUNTER**

OPERATION: \_\_\_\_\_ READING: \_\_\_\_\_

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

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Test Sheet 6

**25kV BUSCOUPLER**

SUBSTATION: \_\_\_\_\_ REFERENCE No: \_\_\_\_\_

PANEL No: \_\_\_\_\_ CB No: \_\_\_\_\_ DESIGNATION : \_\_\_\_\_

**CURRENT TRANSFORMER**

**CT MAGNETISATION CHARACTERISTICS**

**CT DATA**

V	I
250	
300	
350	
400	
450	

MAKE: \_\_\_\_\_  
VA: \_\_\_\_\_  
RATIO: \_\_\_\_\_  
CLASS: \_\_\_\_\_

**RELAY**

RELAY TYPE : CAG \_\_\_\_\_ SERIAL No: \_\_\_\_\_

RATING:

PLUG MULTIPLE SETTING: \_\_\_\_\_ CURRENT MULTIPLIER: \_\_\_\_\_

PICKUP: \_\_\_\_\_ A (SEC. INJECTION INTO RELAY )

APPLY FAULT CURRENT TO RELAY AND ATTEMPT TO CLOSE THE CB.

RELAY TRIPS THE CB: YES/NO FLAG OPERATION: YES/NO

CHECK INTERLOCKING WITH BOTH INCOMMRS: \_\_\_\_\_

(VT's DE-ENERGISED, MANUALLY OPERATE CORRESPONDING VAG/VAA ELEMENTS)

VAA/ VAG RELAY SERIAL No: \_\_\_\_\_

**CB TRIP COUNTER**

OPERATION : \_\_\_\_\_ READING : \_\_\_\_\_

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



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Test Sheet 7

**EARTHING OF 25kV SUBSTATIONS**

Reference should be made to drawing number CEE-TBD-8 titled '*Earthing arrangement: 25kV AC traction substation*'.

**Procedure:**

- Take any corner of the security fence as a reference point and measure the earth resistance. If earth is still good, the resistance should be less than 5Ω.
- Record the result in the space provided on the attached sheet.
- Inject 200A AC between the reference point and other three corners, as well as between the reference and the other equipment and take voltmeter readings. The readings should be taken before and after 30 seconds have elapsed.
- Record the results in the columns provided. The list of equipment may be extended to capture equipment that is not listed on the test sheet.

**Results:** Substation: \_\_\_\_\_

Resistance of test spike (Ω): \_\_\_\_\_

Resistance of ref point (Sub earth) \_\_\_\_\_

Inject 200A between reference point and	Initial Voltage	Voltage after 30 seconds	Current after 30 seconds
2 <sup>nd</sup> corner			
3 <sup>rd</sup> corner			
4 <sup>th</sup> corner			
Ring earth in building			
25kV isolator			
Substation portal with 25kV L.A's			
Earthing links			
Main transformer tank			
Circuit Breaker frame			
Lightning arrester frame			
Isolator frame			

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

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Test Sheet 8

**25kV SUBSTATIONS VACUUM CIRCUIT BREAKERS**

Substation: \_\_\_\_\_

VCB No.: \_\_\_\_\_

- The following tests should be done on the Vacuum Circuit Breaker and the measured values recorded on the space provided.

TEST	EXPECTED VALUES	MEASURED VALUES
Rod travel	25mm	
VCB gap	12mm	
AC Pressure Test – Bottle 1	50kV for 1 min	See Note
AC Pressure Test – Bottle 2	50kV for 1 min	<b>See Note</b>
Contact resistance with 100A DC – Bottle 1	Less than 60 $\mu\Omega$ (Volt drop < 6 mV)	
Contact resistance with 100A DC – Bottle 2	Less than 60 $\mu\Omega$ (Volt drop > 6 mV)	
Closing Speed	60 m sec	
Tripping Speed	35 m sec	

**Note – Pressure Tests are not required for this contract.**

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



**11kV INFEED  
McGRAW-EDISON RECLOSERS**

**Procedure for Over current trip testing**

- INJECT CURRENT TO THE SOURCE SIDE OF TWO PHASES WITH THEIR LOAD SIDE PHASES SHORTED. Monitor the value of trip current required (over current) and record it on the space provided below.
- REPEAT THE ABOVE FOR ALL THE COMBINATION OF SOURCE AND LOAD SIDE PHASES AND RECORD THE TRIP CURRENT VALUES.
- INJECT TWO (2) TIMES THE TRIP OVER CURRENT VALUES TO THE SOURCE SIDE OF TWO PHASES WITH THEIR LOAD SIDE PHASES SHORTED AND RECORD THE TRIP TIMES.
- REPEAT THE ABOVE FOR ALL THE COMBINATION OF SOURCE AND LOAD SIDE PHASES AND RECORD THE TRIP TIMES ON THE SPACES PROVIDED.
- RECORD THE NUMBER OF TRIPS TO LOCKOUT.

**Procedure for Earth fault trip testing**

- INJECT CURRENT TO EACH PHASE, INDIVIDUALLY, OF THE VCB AND DETERMINE THE TRIP CURRENT VALUES AND RECORD IN THE SPACES BELOW.
- INJECT TWO (2) TIMES THE TRIP EARTH FAULT CURRENT VALUES TO EACH PHASE AND RECORD THE TRIP TIMES.
- RECORD THE NUMBER OF TRIPS TO LOCKOUT.

**Results:**

**Substation/Location:** \_\_\_\_\_

	PHASES		
	1+2	1+3	2+3
O/C			
Trip Current – O/C (Amps)			
Trip time @ 2 X Trip Current – O/C (seconds)			
E/F	1	2	3
Trip Current – E/F (Amps)			
Trip time @ 2 X Trip Current – E/F (seconds)			
LOCKOUT			
Number of Trips to Lockout			

**Testing of the two earth-spikes on either side of the H-mast:**


- Resistance to test spike:( Less than 1000 Ω) \_\_\_\_\_ Ω
- Resistance to 1<sup>st</sup> earth-spike: \_\_\_\_\_ Ω
- Resistance to 2<sup>nd</sup> earth-spike: \_\_\_\_\_ Ω

DONE BY: \_\_\_\_\_ SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_


**Returnable Document**

<b>Electrical Test Laboratory</b>																	
<b>E L &amp; P Substation</b>																	
<b>Test Sheet 10</b>																	
NAME :																	
DESIGNATION :						OCB No. :											
PANEL NO. :						DATE :			NATURE : R/C								
<b>D.M.I.T. RELAY.</b>						<b>SOLKOR R/TRANSLAY</b>											
CT RATIO :						CT RATIO :											
V	R Amp	Y Amp	B Amp			V	R Amp	Y Amp	B Amp								
POLARITIES :						PILOT CABLE											
O/L SETTING : A/%						T.M.S. :											
E/L SETTING : A/%						Insulation resistance :											
RELAY TESTED PRIM/ SEC/ TW. INJECTION						T1 - E :											
MULTIPLE	O/L R ph.	O/L Y ph.	O/L B ph.	E/L			T2 - E :										
Of P.C.S.	A	Sec	A	Sec	A	Sec	A	Sec	T1 - T2 :								
2																	
4																	
6																	
<b>INSTANTANEOUS RELAY</b>						<b>OVERALL FAULT SETTING</b>											
O/L Setting						E/L Setting											
R ph. Trips at A						Y - E											
Y ph. Trips at A						B - E											
B ph. Trips at A						R - Y											
BUCHOLZ RELAY						B - Y											
Relay trip & lock-out OCB. Give indication.						R - B											
TEMPERATURE RELAY						CURRENT BETWEEN			RELAY OUTPUT								
Relay trip OCB. Give indication.						R - E 1.10A			V								
<b>FRAME LEAKAGE RELAY:</b>						Y - E 1.40A			V								
V	1 A	2 A	3 A	ZONE	1	2	3	B - E 2.00 A			V						
				TYPE				R - Y 4.50 A			V						
				PLUG				B - Y 4.50 A			V						
				P / Amp				R - B 2.25 A			V						
				TRIPS				RELAY TYPE :									
				RATIO				SETTING :									
						RESISTANCE MEASUREMENTS											
						ZONE			1			2			3		
						E											
						TEST SPIKES :			Ohm			1					
						EARTH MAT :			Ohm			2					

## Returnable Document

Rail Network Maintenance						BBF8998 Version 2		
AC Traction Supply Substations Test Sheet								
Primary Circuit Breakers: Contact Resistance and Operational Timing tests. Secondary Circuit Breakers(VCB's): Contact Resistance and Operational Timing tests.								
Substation:		Single- / A- / B unit		Commissioning:		Routine:		
Primary Circuit Breakers								
Contact Resistance Test				Red	White	Blue		
Test current applied: 100 Amps DC		mVolt Specified		3.5 ± 0.3mV	3.5 ± 0.3mV	3.5 ± 0.3mV		
		mVolt Measured						
Operational Timing tests								
Make of Test Instrument applied:				Red	White	Blue		
		Closing time Specified		56 ± 5mS	56 ± 5mS	56 ± 5mS		
Operating Time mSec		Closing time Actual						
		Opening time Specified		33 ± 3mS	33 ± 3mS	33 ± 3mS		
		Opening time Actual						
Secondary Circuit Breakers								
Contact Resistance Test				Incomer VCB No.:		Feeder VCB No.:		
Test current applied: 100 Amps DC		Contact No		1	2	1	2	
		mVolt Specified		< 6 mV	< 6 mV	< 6 mV	< 6 mV	< 6 mV
		mVolt Measured						
Operational Timing tests								
Make of Test Instrument applied:				Incomer VCB No.:		Feeder VCB No.:		
		Contact No		1	2	1	2	1
Operating Time mSec		Closing time Specified		60 ± 5mS	60 ± 5mS	60 ± 5mS	60 ± 5mS	
		Closing time Actual						
		Opening time Specified		35 ± 3mS	35 ± 3mS	35 ± 3mS	35 ± 3mS	35 ± 3mS
		Opening time Actual						
Tested by: Name:		Signature:		Witnessed by: Name:		Signature:		
						Date:		

**Returnable Document**

Rail Network Maintenance					BBF8996 Version 2									
25 kV AC Traction Substations Test Sheet Incomer and Track Feeder VCB's: Current Transformer Ratio and Mag. curves. Battery Undervoltage Relays. Protection Relays: IDMT, Reverse power, Thermal Overload and Distance Protection.														
Substation: <u>Single / A / B Unit</u> Routine : <u>Commissioning:</u>														
Panel No														
Designation	Incomer													
CT Winding	P1/1S		P1/1S Dist. Prot	P1/2S Therm O/load		P1/1S Dist. Prot	P1/2S Therm O/load							
CT Ratio Marked	1200/1		1200/1	1200/1		1200/1	1200/1							
CT Ratio Measured														
Magnetisation curves	Volts	Amps		Volts	Amps	Volts	Amps	Volts	Amps	Volts	Amps			
Time delay Overcurrent Protection Relays	IDMTL Relay: (NI) I <sub>set</sub> = xIn t set =				Thermal Relay: I <sub>th</sub> >set= xIn T set =				Thermal Relay : I <sub>th</sub> >set= xIn T set =					
Operating time in seconds to trip VCB's with indication.	Multiple	Amps	Specified	Actual	Multiple	Amps	Specified	Actual	Multiple	Amps	Specified	Actual		
	2 x Iset				2.00 x Iset				2.00 x Iset					
Instantaneous Overcurrent Protection Relays:	IDMT Relay: (NI) I <sub>inst</sub> set= xIn t set =				(1)IDMT (2)Backup Relay: (1)I <sub>DMT</sub> set= xIn t set =				(1)IDMT (2)Backup Relay: (1)I <sub>DMT</sub> set= xIn t set =					
					(2) I <sub>inst</sub> set= xIn t set =				(2) I <sub>inst</sub> set= xIn t set =					
Operating time in seconds to trip VCB's with indication.	Multiple	Amps	Specified	Actual	Multiple	Amps	Specified	Actual	Multiple	Amps	Specified	Actual		
	4 x Iset				(1)2 x Iset				(1)2 x Iset					
					(2)4 x Iset				(2)4 x Iset					
Reverse power and Distance Protection Relays: Make & Type:	Reverse power:				Distance Protection:				Distance Protection:					
	Current direction	Tripping Amps			Zone	R	X	Specified	Operating	Zone	R	X	Specified	Operating
Operating values to trip VCB's with indication.	Forward				1					1				
	Reverse				2					2				
	Voltage applied				3					3				
					4					4				
					5					5				
Battery undervoltage protection relays	Set to pickup at _____ and dropout at _____ volts tripping VCB to lockout				Set to pickup at _____ and dropout at _____ volts tripping VCB to lockout				Set to pickup at _____ and dropout at _____ volts tripping VCB to lockout					
Tested by: Name:	Signature:			Witnessed by: Name:				Signature:			Date:			