

**Transnet Freight Rail**

an Operating Division of **TRANSNET SOC LTD**

[hereinafter referred to as **Transnet**]

Registration Number 1990/000900/30

**REQUEST FOR QUOTATION [RFQ] No ERACAR-NPG-56593**

**FOR THE SUPPLY AND DELIVERY OF 3KV DC HIGH SPEED CIRCUIT BREAKER COMPLETE WITH TROLLEY AND FEEDER PROTECTION RELAY AT THE MIDDELBURG DEPOT FOR A ONCE OFF PERIOD**

**ISSUE DATE: 04 NOVEMBER 2025**  
**CLOSING DATE: 11 NOVEMBER 2025**  
**CLOSING TIME: 10:00 AM**  
**BID VALIDITY PERIOD: 90 BUSINESS DAYS FROM CLOSING DATE (17 MARCH 2026)**  
**SUBMISSION TO: TRANSNET E-TENDER SUBMISSION PORTAL – SEE SBD 1 FOR DETAILS.**

## SECTION 1: SBD1 FORM

PART A  
INVITATION TO BID**YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF TRANSNET RAIL INFRASTRUCTURE MANAGER, A DIVISION TRANSNET SOC LTD**

BID NUMBER:	<b>ERACAR-NPG-56593</b>	ISSUE DATE:	<b>04 NOVEMBER 2025</b>	CLOSING DATE:	<b>11 NOVEMBER 2025</b>	CLOSING TIME:	<b>10:00 AM</b>
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DESCRIPTION	<b>FOR THE SUPPLY AND DELIVERY OF 3KV DC HIGH SPEED CIRCUIT BREAKER COMPLETE WITH TROLLEY AND FEEDER PROTECTION RELAY AT THE MIDDELBURG DEPOT FOR A ONCE OFF PERIOD</b>
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**BID RESPONSE DOCUMENTS SUBMISSION INSTRUCTIONS**

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.

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

- a) Log on to the Transnet eTenders management platform website/Portal using **Google Chrome:** [transnetetenders.azurewebsites.net](https://transnetetenders.azurewebsites.net);
- b) Click on "ADVERTISED TENDERS" to view advertised tenders;
- c) Click on "SIGN IN/REGISTER to register new bidder information and ensure that all mandatory information is completed OR to sign in if already registered;
- d) Toggle (click to switch) the "Log an Intent" button to submit a bid;
- e) Respondents are to submit bid documents by uploading them onto the Transnet system against each tender selected. A Bidder can upload 30mb per upload and multiple uploads are permitted.**
- f) Bidders should ensure that electronic bid submissions are submitted at least a day before the closing date and bidders should not wait for the last hour before the deadline to submit. This is to enable them to timeously address issues which they may encounter due to internet speed, bandwidth or the size of the number of uploads being submitted. Transnet will not be held liable for any challenges experienced by bidders as a result of their own technical challenges.
- g) No late submissions will be accepted.
- h) Each company must register its own profile using its company details and use the corresponding registered profile to log an intent to bid as well as submitting any bid. Transnet will not accept a bid or will disqualify a bidder who submits a bid in the Transnet e-tender submission through another bidders'/Company's profile. In other words, each bidder must register the intent to bid and submit its bid through its own profile under the same company name that will eventually bid for the tender. No company shall submit a bid on behalf of another company regardless of the company being a subsidiary or holding company.
- i) In case of a Joint Venture, any of the parties/companies to the Joint Venture may use its registered profile to submit a bid on behalf of the Joint Venture.
- j) A detailed bidder guide can be found on the Transnet Portal [transnetetenders.azurewebsites.net](https://transnetetenders.azurewebsites.net)

**BIDDING PROCEDURE / TECHNICAL ENQUIRIES MAY BE DIRECTED TO:**

CONTACT PERSON	<b>Anah Ralusi</b>
TELEPHONE NUMBER	<b>013 752 9262</b>
FACSIMILE NUMBER	<b>n/a</b>
E-MAIL ADDRESS	<b><a href="mailto:Anah.Ralusi@transnet.net">Anah.Ralusi@transnet.net</a></b>

**SUPPLIER INFORMATION**

NAME OF BIDDER	
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Respondent's Signature

Date &amp; Company Stamp

POSTAL ADDRESS			
STREET ADDRESS			
TELEPHONE NUMBER	CODE	NUMBER	
CELLPHONE NUMBER			
FACSIMILE NUMBER	CODE	NUMBER	
E-MAIL ADDRESS			
VAT REGISTRATION NUMBER			
IT IS A CONDITION OF THIS BID THAT THE TAX MATTERS OF THE SUCCESSFUL RESPONDENTS BE IN ORDER, OR THAT SATISFACTORY ARRANGEMENTS HAVE BEEN MADE WITH SOUTH AFRICAN REVENUE SERVICE (SARS) TO MEET THE RESPONDENTS TAX OBLIGATIONS.			
	TCS PIN	OR	CSD NO:
SUPPLIER COMPLIANCE STATUS	<input type="checkbox"/> Yes  <input type="checkbox"/> No	<b>BBEE STATUS LEVEL SWORN AFFIDAVIT</b>	
Yes, Who was the Certificate issued by			
AN ACCOUNTING OFFICER AS CONTEMPLATED IN THE CLOSE CORPORATION ACT (CCA) AND NAME THE APPLICABLE IN THE TICK BOX	<input type="checkbox"/>	AN ACCOUNTING OFFICER AS CONTEMPLATED IN THE CLOSE CORPORATION ACT (CCA)	
	<input type="checkbox"/>	A VERIFICATION AGENCY ACCREDITED BY THE SOUTH AFRICAN ACCREDITATION SYSTEM (SANAS)	
	<input type="checkbox"/>	A REGISTERED AUDITOR NAME:	
<b>[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT MUST BE SUBMITTED FOR PURPOSES OF COMPLIANCE WITH THE B-BBEE ACT]</b>			
<b>1</b> ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No  [IF YES ENCLOSE PROOF]	<b>2</b> ARE YOU A FOREIGN BASED SUPPLIER FOR <b>THE GOODS /SERVICES /WORKS OFFERED?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No  [IF YES, ANSWER QUESTIONNAIRE BELOW ]
Signature of the Bidder	.....	Date:	.....
<b>QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS</b>			
IS THE BIDDER A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?		<input type="checkbox"/> YES <input type="checkbox"/> NO	
DOES THE BIDDER HAVE A BRANCH IN THE RSA?		<input type="checkbox"/> YES <input type="checkbox"/> NO	
DOES THE BIDDER HAVE A PERMANENT ESTABLISHMENT IN THE RSA?		<input type="checkbox"/> YES <input type="checkbox"/> NO	
DOES THE BIDDER HAVE ANY SOURCE OF INCOME IN THE RSA?		<input type="checkbox"/> YES <input type="checkbox"/> NO	
<b>IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 1.3 BELOW.</b>			

Respondent's Signature

Date &amp; Company Stamp

**PART B  
TERMS AND CONDITIONS FOR BIDDING**

**1. TAX COMPLIANCE REQUIREMENTS**

- 1.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
- 1.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER’S PROFILE AND TAX STATUS.
- 1.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.
- 1.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
- 1.5 IN BIDS WHERE UNINCORPORATED CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
- 1.6 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
- 1.7 RESPONDENTS 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. ONLY FOREIGN SUPPLIERS WITH NO LOCAL REGISTERED ENTITY NEED NOT REGISTER ON THE CSD. THE CSD CAN BE ACCESSED AT [HTTPS://SECURE.CSD.GOV.ZA/iu](https://secure.csd.gov.za/iu)

**NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.**

SIGNATURE OF BIDDER: .....

CAPACITY UNDER WHICH THIS BID IS SIGNED: .....

(Proof of authority must be submitted e.g. company resolution)

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

## SECTION 2: NOTICE TO BIDDERS

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### 1 Responses to RFQ

Responses to this RFQ [**Quotations**] must not include documents or reference relating to any other quotation or proposal. Any additional conditions that the bidder wants to bring to the attention of Transnet must be embodied in an accompanying letter.

### 2 Communication (Clarifications and Complaints)

**2.1** Specific clarification queries relating to this RFQ before the closing date of the RFQ should be submitted to **Anah Ralusi** before **12:00pm on 07 November 2025**. In the interest of fairness and transparency Transnet's response to such a query will then be made available to other bidders.

**2.2** Specific complaints relating to this RFQ before or after the closing date should be formally submitted by emailing [groupscmcomplaints@transnet.net](mailto:groupscmcomplaints@transnet.net). Once the complaint has been submitted, the Transnet SCM Complaints office will acknowledge your complaint and send you a complaint form for completion.

**2.3** It is prohibited for Respondents to attempt, either directly or indirectly, to canvass any officer or employee of Transnet in respect of this RFQ between the closing date and the date of the award of the business.

**2.4** Respondents found to be in collusion with one another will be automatically disqualified and restricted from doing business with organs of state for a specified period.

**2.5** The outcome of the process will be communicated, via email, to all bidders as soon as the process is concluded. Should a bidder not receive any communication from Transnet 30 days after the expiry of the validity period of this bid, the bidder can consider its bid not being successful. All unsuccessful bidders have a right to request Transnet to furnish reasons for their bid not being successful. This requested must be directed to the contact person stated in the SBD 1 form

### 3 Legal Compliance

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

### 4 Employment Equity Act

Respondents must comply with the requirements of the Employment Equity Act 55 of 1998 applicable to it including (but not limited to) Section 53 of the Employment Equity Act.

### 5 Changes to Quotations

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

### 6 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.

## 7 Disclaimers

**7.1** Respondents are hereby advised that 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);
- award only a portion of the proposed goods / services which are reflected in the scope of this RFQ;
- split the award of the order/s between more than one Supplier/Service Provider as may be explicitly articulated in the conditions or objective criteria to this RFQ;
- cancel the quotation process;
- validate any information submitted by Respondents in response to this bid. This would include, but is not limited to, requesting the Respondents to provide supporting evidence. By submitting a bid, Respondents hereby irrevocably grant the necessary consent to Transnet to do so;
- request audited financial statements or other documentation for the purposes of a due diligence exercise;
- not accept any changes or purported changes by the Respondent to the bid rates after the closing date and/or after the award of the business, unless the contract specifically provides for it;
- to cancel the contract and/request that National Treasury place the Respondent on its Database of Restricted Suppliers for a period not exceeding 10 years, on the basis that a contract was awarded on the strength of incorrect information furnished by the Respondent or on any other basis recognised in law;
- award the business to the next ranked bidder, provided that he/she is still prepared to provide the required Goods/Services at the quoted price, should the preferred bidder fail to sign or commence with the contract within a reasonable period after being requested to do so. Under such circumstances, the validity of the bids of the next ranked bidder(s) will be deemed to remain valid, irrespective of whether the next ranked bidder(s) were notified of their bid being unsuccessful. Bidders may therefore be requested to advise whether they would still be prepared to provide the required Goods/Services at their quoted price.
- Should a bidder fail to respond to a request for extension of the validity period before it expires, that bidder will be excluded from tender process.
- A bidder may be requested to furnish further information relating to its Environmental, Social and Governance (ESG) standing at any stage of the procurement or contracting process. This information may not be used for purposes of evaluation and/or disqualify bidder but may be use for purpose of record and analysis of ESG compliance.

**8 Specification/Scope of Work****(Refer to Annexure A for detailed specification)**

Transnet Rail Infrastructure Manager (TRIM), an operating division of Transnet SOC Ltd, intends to procure one complete 3 kV DC High-Speed Circuit Breaker assembly, inclusive of trolley and feeder protection relay, for installation and commissioning at the Middelburg Depot.

The equipment will form part of Transnet's 3 kV DC traction power network and is required to ensure reliable feeder protection, improved network safety, and operational continuity. This once-off procurement seeks to replace or upgrade existing breaker installations to align with current Transnet standards and specifications.

**8.1 Scope of Supply and Delivery**

The successful bidder shall supply, deliver, and provide complete documentation for the items listed below. All equipment shall be **new, unused, and compliant with Transnet specification CEE-0099\_ISS\_2013** (See Annexure A) and associated drawings.

Item No.	Description	Quantity	Unit of Measure
1	<b>3 kV DC High-Speed Circuit Breaker</b> – complete assembly, trip-free type, continuous rating $\geq 2\,000$ A, short-circuit breaking capacity $\geq 50$ kA (10 ms time constant), fully compatible with Transnet's 3 kV DC traction system, complete with all auxiliary and tripping coils, arc chutes, and control circuitry.	1	Each
2	<b>High-Speed Circuit Breaker Trolley/Truck</b> – rack-out-type truck manufactured in accordance with Transnet drawing CEE-TCQ-69 and related references, constructed from corrosion-resistant steel with mechanical interlock and earthing provision.	1	Each
3	<b>Feeder Protection Relay (110 V DC control voltage)</b> – microprocessor-based unit in accordance with specification BBG 0894, providing feeder fault, overcurrent, earth-fault, differential, and auto-reclose functions; must interface seamlessly with the supplied HSCB and support IEC 61850/Modbus RS-485 communication protocols.	1	Each
4	<b>Delivery of Material to Middelburg Depot</b> – inclusive of packaging, insurance, transportation, off-loading, and handling.	1	Sum

**8.2 Governing Specification**

All equipment supplied under this contract shall conform to **Transnet Freight Rail Specification CEE-0099\_ISS\_2013** and the following associated drawings and standards:

- CEE-TBP-35 – Wiring diagram: HSCB, Electronic Control Relay
- CEE-TBP-39 – Circuit Diagram: HSCB, Electronic Control Relay
- CEE-TCQ-63 – Assembly of Lightweight Concrete Cell with HSCB Truck in Position
- CEE-TCQ-69 – Truck Frame Assembly for HSCB
- IEC 60947-2 – Switchgear and Controlgear
- CEE 0227 – Design and Manufacture of a Modular 3 kV DC 2000 A Circuit Breaker Cell
- BBB 0041 – Preparation of Drawings for Transnet Freight Rail Infrastructure
- BBD 5994 – Technical Documentation Management Policy

In any instance where this specification conflicts with CEE-0099, **the requirements of CEE-0099 shall take precedence.**

### 8.3 Service and Environmental Conditions

The equipment shall operate satisfactorily under the following conditions:

- Altitude: 0 to 1 800 m above sea level
- Ambient temperature: -10 °C to +55 °C
- Relative humidity: 10 % to 90 %
- Pollution level: Heavy industrial and coastal conditions
- Vibration: Moderate railway-adjacent substation vibration
- System voltage: Nominal 3.15 kV DC (operating range 2.4 – 3.9 kV)

### 8.4 Technical Requirements

The equipment shall meet or exceed the following minimum requirements:

- Continuous current rating:  $\geq 2\ 000\ \text{A}$
- Short-time withstand current: 50 kA for 3 seconds
- Short-circuit breaking capacity: 50 kA with 10 ms time constant
- Insulation withstand: 10.5 kV rms for 1 minute
- Calibration range: 2 000 A to 5 000 A
- Minimum mechanical endurance: 10 000 operations
- Minimum maintenance interval: 250 trips at 4 000 A and 3.2 kV
- Fail-to-safety design on loss of control supply
- Auxiliary contacts: 6 × 'a' and 6 × 'b' per breaker
- Control voltage: 110 V DC (operating range 90 – 140 V DC)

All designs must permit easy access for inspection and maintenance, employ non-asbestos arc-chute materials, and ensure full interchangeability of parts.

### 8.5 Testing and Quality Assurance

a) **Type Test Certificates:**

Tenderers shall provide certified test reports verifying compliance with Clauses 9.1.1 to 9.1.7 of CEE-0099.

b) **Factory Acceptance Tests (FAT):**

Each circuit breaker shall be fully assembled, tested, and supplied with oscillograms of short-circuit performance.

c) **Inspection:**

Transnet Freight Rail's Technology Management – Electrical Technology will issue final inspection certificates prior to acceptance.

## 8.6 Life-Cycle Cost and Spares

Tenderers must submit the following with their offers in accordance with Clause 6 of CEE-0099:

- Separate quotation for recommended spares to cover five (5) years of operation per 20 breakers.
- Separate quotation for special tools required for maintenance.
- Estimated annual maintenance labour hours over a 25-year period.
- Expected service life and availability of critical components.

## 8.7 Delivery Requirements

- Delivery location: Transnet Freight Rail – Middelburg Depot, Mpumalanga.
- Delivery period: Within 8 to 12 weeks from date of official purchase order.
- Supplier to ensure safe transportation, insurance, and off-loading at site.
- All packaging shall conform to Clause 10 of CEE-0099 and be suitable for fork-lift handling and weather protection.

## 8.8 Life-Cycle Cost and Spares (For Information Purposes Only)

In accordance with Clause 6 of Transnet Specification CEE-0099, tenderers are required to submit life-cycle-related information for record and maintenance planning purposes only.

**This information will not form part of the evaluation or adjudication process and will not influence the award of the tender.**

Tenderers shall therefore submit, as separate informational schedules:

- A quotation for recommended spares sufficient to cover five (5) years of operation per 20 breakers supplied;
- A quotation for any special tools required for routine maintenance;
- An estimate of annual maintenance labour hours over a 25-year operating period; and
- The expected service life and availability of critical components for the offered design.

**These submissions will be used by Transnet for internal asset-management and life-cycle-cost planning only and shall not carry any evaluation weighting.**

## 9 Legal review

A Proposal submitted by a Respondent will be subjected to review and acceptance or rejection of its proposed contractual terms and conditions by Transnet's Legal Counsel, prior to consideration for an award of business.

## 10 Security clearance

Acceptance of this bid could be subject to the condition that the Successful Respondent, its personnel providing the goods and its subcontractor(s) must obtain security clearance from the appropriate authorities to the level of CONFIDENTIAL/ SECRET/TOP SECRET. Obtaining the required clearance is the responsibility of the Successful Respondent. Acceptance of the bid is also subject to the condition that the Successful Respondent will implement all such security measures as the safe performance of the contract may require.

**IF YOU DON'T REPORT IT, YOU SUPPORT IT!**



Email: [Transnet.Reportit@outlook.com](mailto:Transnet.Reportit@outlook.com)

Toll free: 0800 003 056

SMS:0637867403

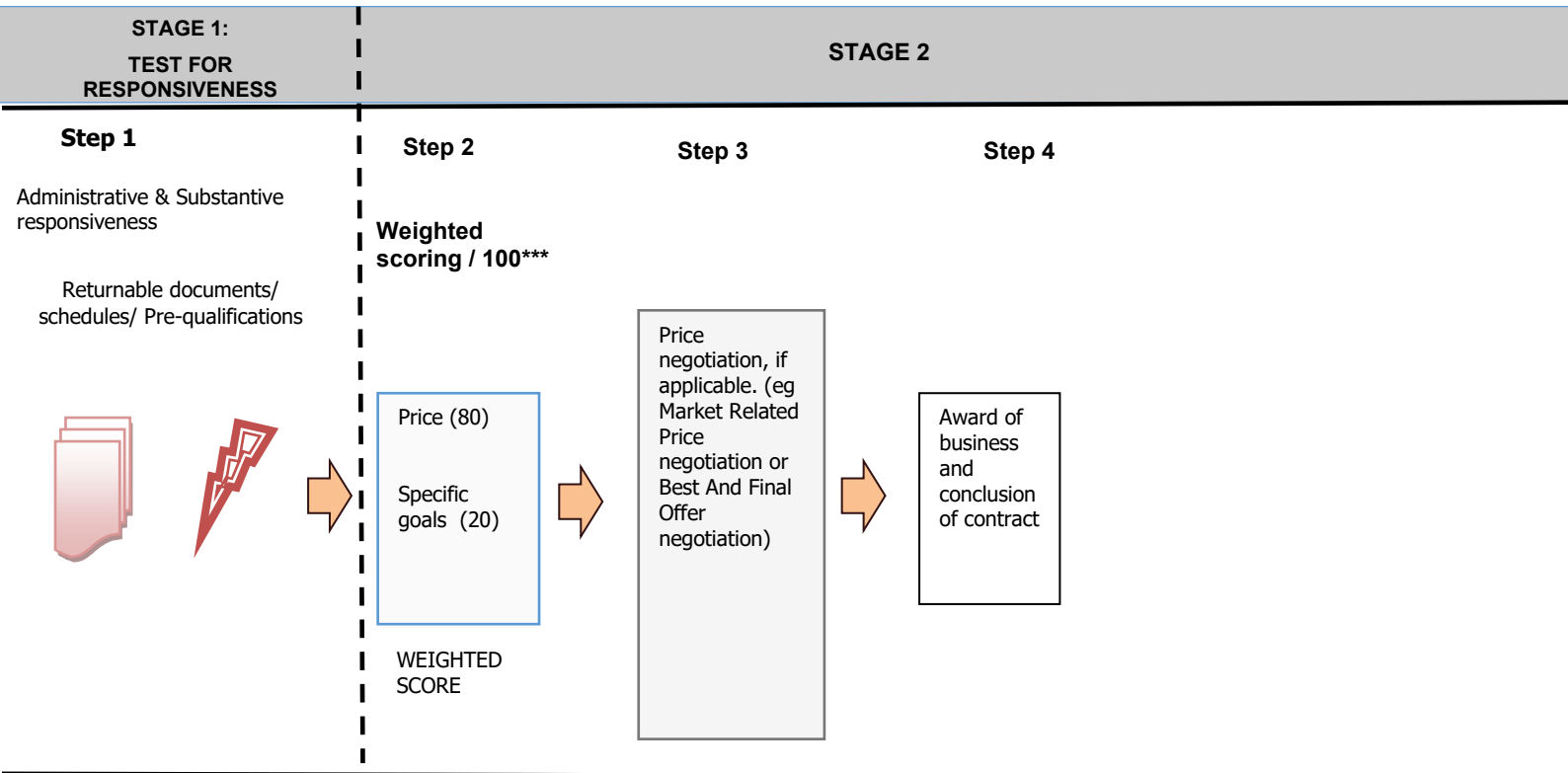
Please Call Me number: \*120\*0637867403

Website: <https://whistleblowersoftware.com/secure/Transnet>

**SECTION 3  
EVALUATION METHODOLOGY, CRITERIA AND RETURNABLE DOCUMENTS**

**1 Evaluation Criteria**

Transnet will utilise the following methodology and criteria in selecting a preferred Supplier/Service provider:



**1.1 STEP ONE: Test for Administrative and Substantive Responsiveness**

The test for administrative and Substantive responsiveness will include the following:

<b>Administrative &amp; Substantive responsiveness check</b>	<b>RFQ Reference</b>
• Whether the Bid has been lodged on time	
• Whether all Returnable Documents and/or schedules [where applicable] were completed and returned by the closing date and time	<i>Section 3</i>
• Verify the validity of all returnable documents	<i>Section 3</i>
• Verify if the Bid document has been duly signed by the authorised respondent	<i>All sections</i>
• Whether any general and legislation qualification criteria set by Transnet, have been met	<i>All sections</i>
• Whether the Bid contains a priced offer	<i>Section 4 - Quotation Form</i>
• Whether the Bid materially complies with the scope and/or specification given	<i>All Sections</i>

***The test for responsiveness [Step One] must be passed for a Respondent's Proposal to progress to Step Two for further pre-qualification***

**1.2 STEP TWO Evaluation and Final Weighted Scoring**a) **Price Criteria** [Weighted score 80 points]:

Evaluation Criteria	RFP Reference
<ul style="list-style-type: none"> <li>• Commercial offer</li> </ul>	<i>Section 4</i>

Transnet will utilise the following formula in its evaluation of Price:

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

Where:

- $P_s$  = Score for the Bid under consideration  
 $P_t$  = Price of Bid under consideration  
 $P_{min}$  = Price of lowest acceptable Bid

b) **Specific Goals** [Weighted score 20 point]

- Specific goals preference points claim form
- Preference points will be awarded to a bidder for attaining the specific goals requirements in accordance with the table indicated in Section 4.1 of the specific goals Claim Form.

**1.3 STEP THREE: Price Negotiations (if applicable)**

- Respondents are to note that Transnet may not award a contract if the price offered is not market-related. In this regard, Transnet reserves the right to engage in PTN with the view to achieving a market-related price or to cancel the tender. Negotiations will be done in a sequential manner i.e.:
  - first negotiate with the highest ranked bidder or cancel the bid, should such negotiations fail,
  - negotiate with the 2nd and 3rd ranked bidders (if required) in a sequential manner.
- In the event of any Respondent being notified of such short-listed/preferred bidder status, his/her bid, as well as any subsequent negotiated best and final offers (BAFO), will automatically be deemed to remain valid during the negotiation period and until the ultimate award of business.
- Should Transnet conduct post tender negotiations, Respondents will be requested to provide their best and final offers to Transnet based on such negotiations. Where a market related price has been achieved through negotiation, the contract will be awarded to the successful Respondent(s).

**1.4 STEP FOUR: Award of business and conclusion of contract**

- Immediately after approval to award the contract has been received, the successful or preferred bidder(s) will be informed of the acceptance of his/their Quotation by way of a Letter of Award. Thereafter the final contract will be concluded with the successful Respondent(s), where applicable.
- Alternatively, the acceptance of a letter of award by the Successful Respondent will constitute the final contract read together with their RFQ response and the Standard Terms and Conditions. This will be stated in the letter of award.

**2 Validity Period (17 March 2026)**

Transnet requires a validity period of 90 [ninety] Business Days from the closing date of this RFQ, excluding the first day and including the last day.

Bidders are to note that they may be requested to extend the validity period of their bid, on the same terms and conditions, if the internal evaluation process has not been finalised within the validity period. However, once the adjudication body has approved the process and award of the business to the successful bidder(s), the validity of the successful bidder(s)' bid will be deemed to remain valid until a final contract has been concluded.

**3 Disclosure of contract information****Prices Quoted**

Respondents are to note that, on award of business, Transnet is required to publish the outcome of the RFQ and information of the successful Respondents *inter alia* on the National Treasury e-Tender Publication Portal, ([www.etenders.gov.za](http://www.etenders.gov.za)), as required per National Treasury Instruction Note 09 of 2022/2023.

**Johannesburg Stock Exchange Debt Listing Requirements**

Transnet may also be required to disclose information relating to the subsequent contract i.e. the name of the company, goods/services provided by the company, the value and duration of the contract, etc. in compliance with the Johannesburg Stock Exchange (JSE) Debt Listing Requirements.

**Domestic Prominent Influential Persons (DPIP) OR Foreign Prominent Public Officials (FPPO)**

Transnet is free to procure the services of any person within or outside the Republic of South Africa in accordance with applicable legislation. Transnet shall not conduct or conclude business transactions, with any Respondents without having:

- Considered relevant governance protocols;
- Determined the DPIP or FPPO status of that counterparty; and
- Conducted a risk assessment and due diligence to assess the potential risks that may be posed by the business relationship.

As per the Transnet Domestic Prominent Influential Persons (DPIP) and Foreign Prominent Public Officials (FPPO) and Related Individuals Policy available on Transnet website <https://www.transnet.net/search/pages/results.aspx?k=FPIDP#k=DPIP>, Respondents are required to disclose any commercial relationship with a DPIP or FPPO (as defined in the Policy) by completing the following section:

The below form contains personal information as defined in the Protection of Personal Information Act, 2013 (the "Act"). By completing the form, the signatory consents to the processing of her/his personal information in accordance with the requirements of the Act. Consent cannot unreasonably be withheld.					
<b>Is the Respondent</b> (Complete with a "Yes" or "No")					
<b>A DPIP/FPPO</b>		<b>Closely Related to a DPIP/FPPO</b>		<b>Closely Associated to a DPIP/FPPO</b>	
<b>List all known business interests, in which a DPIP/FPPO may have a direct/indirect interest or significant participation or involvement.</b>					
No	Name of Entity / Business	Role in the Entity / Business	Shareholding %	Registration Number	Status (Mark the applicable option with an X)

		(Nature of interest/ Participation)			Active	Non-Active
1						
2						

Respondents declaring a commercial relationship with a DPIP or FPPO are to note that Transnet is required to annually publish on its website a list of all business contracts entered into with DPIP or FPPO. This list will include successful Respondents, if applicable.

**4 Returnable Documents**

**Returnable Documents** means all the documents, Sections and Annexures, as listed in the tables below. There are three types of returnable documents as indicated below and Respondents are urged to ensure that these documents are returned with their bids based on the consequences of non-submission as indicated below:

Mandatory Returnable Documents	<i>Failure to provide all these Mandatory Returnable Documents at the Closing Date and time of this RFQ <u>will</u> result in a Respondent's disqualification.</i>
Returnable Documents Used for Scoring	<i>Failure to provide all Returnable Documents used for purposes of scoring a bid, by the closing date and time of this bid will not result in a Respondent's disqualification. However, Bidders will receive an automatic score of zero for the applicable evaluation criterion.</i>
Essential Returnable Documents	<i>Failure to provide essential Returnable Documents may result in Transnet affording Respondents a further opportunity to submit by a set deadline, where applicable. Should a Respondent thereafter fail to submit the requested documents, this may result in a Respondent's disqualification.</i>

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

**a) Mandatory Returnable Documents**

Respondents are required to submit with their bid submissions the following **Mandatory Returnable Documents**, and also to confirm submission of these documents by indicating [Yes or No] in the tables below:

Mandatory Returnable Documents	Submitted [Yes or No]
SECTION 4: Quotation Form (Fully Completed)	

**b) Returnable Documents Used for Scoring**

In addition to the requirements of section (a) above, Respondents are further required to submit with their Proposals the following **Returnable Documents Used for Scoring** and also to confirm submission of these documents by indicating [Yes or No] in the table below:

<b>RETURNABLE DOCUMENTS USED FOR SCORING</b>	<b>SUBMITTED [Yes or No]</b>
Valid proof of Respondent's compliance to Specific Goal requirements stipulated in Section 6 of this RFQ. <ul style="list-style-type: none"> <li>• <b>B-BBEE Level of contributor (1 or 2)</b> - B-BBEE Certificate / Sworn- Affidavit / B-BBEE CIPC Certificate (in case of JV, a consolidated scorecard will be accepted) as per DTIC guideline.</li> <li>• <b>+50% Black Youth Owned Entities</b> - Certified copy of ID Documents of the Owners and B-BBEE Certificate / Sworn- Affidavit / B-BBEE CIPC Certificate (in case of JV, a consolidated scorecard will be accepted) as per DTIC guideline</li> </ul>	

**c) Essential Returnable Documents:**

Respondents are further required to submit the following **Essential Returnable Documents** with their RFQ and to confirm submission of these documents by indicating [Yes or No] in the table below:

<b>ESSENTIAL RETURNABLE DOCUMENTS &amp; SCHEDULES</b>	<b>SUBMITTED [Yes or No]</b>
SECTION 1: SBD1 Form	
SECTION 5: Certificate of Acquaintance with RFQ Documents	
SECTION 6: Specific Goals Points Claim Form	
SECTION 6: RFQ Declaration and Breach of Law Form	
SECTION 7: Protection of Personal Information	
CSD Registration report	
Tax Clearance Certificate	

<b>Additional / Informational Returnables</b>	<b>SUBMITTED [Yes or No]</b>
Life-Cycle Cost and Spares (For Information Purposes Only – see paragraph 8.8 above) <b>Note:</b> The "Life-Cycle Cost and Spares" document is required for information purposes only and will not be evaluated. Non-submission of this document will not render a bid non-responsive or result in disqualification.	

**5 CONTINUED VALIDITY OF RETURNABLE DOCUMENTS**

The successful Respondent will be required to ensure the validity of all returnable documents 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 immediately without any liability and without prejudice to any claims which Transnet may have for damages against the Respondent.

**SECTION 4**  
**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 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/services required, on a "delivered nominated destination" basis, including VAT:

Item No.	Description of Item	QTY	UOM	Unit Price (ZAR, Excl. VAT)	Total Price (ZAR, Excl. VAT)
1	<b>3kV DC High-Speed Circuit Breaker</b> – complete assembly, trip-free type, continuous rating $\geq 2\,000$ A, short-circuit breaking capacity $\geq 50$ kA (10 ms time constant), fully compatible with Transnet's 3kV DC traction system, complete with all auxiliary and tripping coils, arc chutes, and control circuitry.	1	Each		
2	<b>High-Speed Circuit Breaker Trolley/Truck</b> – rack-out-type truck in accordance with Transnet drawing CEE-TCQ-69, corrosion-resistant steel with interlock and earthing provision.	1	Each		
3	<b>Feeder Protection Relay (110V DC)</b> – microprocessor-based unit compliant with BBG 0894, capable of feeder fault, overcurrent, earth-fault, and differential protection, compatible with the supplied HSCB.	1	Each		
4	<b>Delivery of Material to Middelburg Depot</b> – inclusive of packaging, insurance, transportation, and off-loading.	1	Sum		
<b>TOTAL PRICE EXCL. VAT</b>					
<b>VAT (15%)</b>					
<b>TOTAL PRICE INCL. VAT</b>					

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

*Respondents are to note that Transnet will round off final pricing scores to the nearest 2 (two) decimal places.*

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

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

**Notes to Pricing:**

- a) Respondents are to note that if the price offered by the highest scoring bidder is not market-related, Transnet may not award the contract to that Respondent. Transnet may-
- (i) negotiate a market-related price with the Respondent scoring the highest points or cancel the RFQ;
  - (ii) if that Respondent does not agree to a market-related price, negotiate a market-related price with the Respondent scoring the second highest points or cancel the RFQ;
  - (iii) if the Respondent scoring the second highest points does not agree to a market-related price, negotiate a market-related price with the Respondent scoring the third highest points or cancel the RFQ.

If a market-related price is not agreed with the Respondent scoring the third highest points, Transnet must cancel the RFQ.

- b) All Prices must be quoted in South African Rand, inclusive of VAT
- c) Any disbursement not specifically priced for will not be considered/accepted by Transnet.
- d) 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.
- e) 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.
- f) In respect of incoterms conditions, if applicable, please refer to paragraph 25 of the General Bid Conditions

**SECTION 5**  
**RFQ DECLARATION, CERTIFICATE OF ACQUAINTANCE & BREACH OF LAW FORM**

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

1. Transnet's General Bid Conditions
2. Standard RFQ Terms and Conditions for the supply of Goods or Services to Transnet
3. Transnet's Supplier Integrity Pact
4. Non-disclosure Agreement

**Note:** Should a Respondent be successful and awarded the bid, they will be required to complete a Supplier Declaration Form for registration as a vendor onto the Transnet vendor master database.

Should the Bidder find any terms or conditions stipulated in any of the relevant documents quoted in the RFQ unacceptable, it should indicate which conditions are unacceptable and offer alternatives by written submission on its company letterhead, attached to its submitted Bid. 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. A material deviation from the Standard terms or conditions could result in disqualification.

Bidders accept that an obligation rests on them to clarify any uncertainties regarding any bid to which they intend to respond, before submitting the bid. The Bidder agrees that he/she will have no claim or cause of action based on an allegation that any aspect of this RFQ was unclear but in respect of which he/she failed to obtain clarity.

The bidder understands that his/her Bid will be disqualified if this Certificate of Acquaintance with RFQ documents included in the RFQ as a returnable document, is found not to be true and/ or complete in every respect.

We 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 all relevant information relevant to the Supply of the Goods as well as Transnet information and Employees, and have 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 have complied with all obligations of the Bidder/Supplier as indicated in the Transnet Supplier Integrity Pact which includes but are not limited to ensuring that we take all measures necessary to prevent corrupt practices, unfairness and illegal activities in order to secure or in furtherance to secure a contract with Transnet;
6. 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;
7. we declare that an owner / member / director / partner / shareholder/employee of our entity **has / has not been** [delete as applicable] a former employee or board member of Transnet in the past 10 years. I further declare that if they were a former employee or board member of Transnet in the past 10 years that they **were/were not** involved in the bid preparation or had access to the information related to this RFQ; and
8. If such a relationship as indicated in paragraph 7 exists, the Respondent is to complete the following section:

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

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]. Information provided in the declaration may be used by Transnet and/or its affiliates to verify the correctness of the information provided.***

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.

## **BIDDER'S DISCLOSURE (SBD4)**

### **12 PURPOSE OF THE FORM**

12.1 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.

12.2 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.

### **13 Bidder's declaration**

13.1 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**

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

Full Name	Identity Number	Name of State institution

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

13.2.1. If so, furnish particulars:  
 .....  
 .....

13.3 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**

13.3.1. If so, furnish particulars:  
 .....  
 .....

**14 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:

14.1. I have read and I understand the contents of this disclosure;

\_\_\_\_\_

<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.

- 14.2. I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
- 14.3. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium<sup>2</sup> will not be construed as collusive bidding.
- 14.4. 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.
- 14.5. 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.
- 14.6. 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.
- 14.7. 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 12, 13 and 14 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.

#### **15 BREACH OF LAW**

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:

\_\_\_\_\_

<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.

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 _____

\_\_\_\_\_  
Respondent's Signature\_\_\_\_\_  
Date & Company Stamp

**SECTION 6: SPECIFIC GOALS 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 of as per the table below.

**NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF SPECIFIC GOALS, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000.**

**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** R50 000 000 (all applicable taxes included) and therefore the 80/20 preference point system shall be applicable. Despite the stipulated preference point system, Transnet shall use the lowest acceptable bid to determine the applicable preference point system in a situation where all received acceptable bids are received outside the stated preference point system.
- 1.3 The 80/20 preference point system will be applicable to this tender.
- 1.4 Preference points for this bid shall be awarded for:
- (a) Price.
  - (b) B-BBEE Status Level of Contribution.
  - (c) Any other specific goal determined in Transnet preferential procurement policy.
- 1.5 The maximum points for this bid are allocated as follows:

	POINTS
<b>PRICE</b>	<b>80</b>
<b>B-BBEE STATUS LEVEL OF CONTRIBUTOR</b>	<b>20</b>
<b>B-BBEE Level of contributor (Level 1 or 2) (10 points)</b>	
<b>+50% Black Youth Owned Entities (10 points)</b>	
<b>Total points for Price and Specific Goals must not exceed</b>	<b>100</b>

- 1.6 Failure on the part of a bidder to submit proof of specific goals together with the bid will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.
- 1.7 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"** means:
- 1) B-BBEE status level certificate issued by an unauthorised body or person;
  - 2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;
  - 3) Any other requirement prescribed in terms of the B-BBEE Act.
- (j) **"QSE"** means a Qualifying Small Enterprise in terms of a 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

- $P_s$  = Points scored for comparative price of bid under consideration
- $P_t$  = Comparative price of bid under consideration
- $P_{\min}$  = Comparative price of lowest acceptable bid

Selected Specific Goal	Number of points allocated (80/20)
B-BBEE Level of contributor (1 or 2)	10
+50% Black Youth Owned Entities	10
Non-Compliant and/or B-BBEE Level 3-8 contributors	0

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

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

Enterprise	B-BBEE Certificate & Sworn Affidavit
<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<sup>3</sup></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 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**

6.1 B-BBEE Status Level of Contribution: . = .....(maximum of 20 points)

(Points claimed in respect of paragraph 6.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.

**7. SUB-CONTRACTING**

7.1 Will any portion of the contract be sub-contracted?

( *Tick applicable box* )

YES		NO	
-----	--	----	--

7.1.1 If yes, indicate:  
 \_\_\_\_\_

- i) What percentage of the contract will be subcontracted.....%
- ii) The name of the sub-contractor.....
- iii) The B-BBEE status level of the sub-contractor.....
- iv) Whether the sub-contractor is an EME or QSE

**(Tick applicable box)**

YES	NO
-----	----

- v) Specify, by ticking the appropriate box, if subcontracting with any of the enterprises below:

<b>An EME or QSE which is at last 51% owned by:</b>	<b>EME √</b>	<b>QSE √</b>
Black people		
Black people who are youth		
Black people who are women		
Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		
Black people who are military veterans		
<b>OR</b>		
Any EME		
Any QSE		

**8. DECLARATION WITH REGARD TO COMPANY/FIRM**

- 8.1 Name of company/firm:.....
- 8.2 VAT registration number:.....
- 8.3 Company registration number:.....

**8.4 TYPE OF COMPANY/ FIRM**

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

[TICK APPLICABLE BOX]

**8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES**

.....  
 .....

**8.6 COMPANY CLASSIFICATION**

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

[TICK APPLICABLE BOX]

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

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBEE status level of contribution 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 4.1 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 the B-BBEE status level of contributor has been claimed or obtained on a fraudulent basis 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.

WITNESSES

1. ....

2. ....

.....  
SIGNATURE(S) OF BIDDERS(S)

DATE: .....

ADDRESS .....

.....

**SECTION 7****PROTECTION OF PERSONAL INFORMATION**

1. The following terms shall bear the same meaning as contemplated in Section 1 of the Protection of Person information act, No.4 of 2013.("POPIA"):  
consent; data subject; electronic communication; information officer; operator; person; personal information; processing; record; Regulator; responsible party; special information; as well as any terms derived from these terms.
2. Transnet will process all information by the Respondent in terms of the requirements contemplated in Section 4(1) of the POPIA:  
Accountability; Processing limitation; Purpose specification; Further processing limitation; Information quality; Openness; Security safeguards and Data subject participation.
3. The Parties acknowledge and agree that, in relation to personal information that will be processed pursuant to this RFQ, the Responsible party is "Transnet" and the Data subject is the "Respondent". Transnet will process personal information only with the knowledge and authorisation of the Respondent and will treat personal information which comes to its knowledge as confidential and will not disclose it, unless so required by law or subject to the exceptions contained in the POPIA.
4. Transnet reserves all the rights afforded to it by the POPIA in the processing of any of its information as contained in this RFQ and the Respondent is required to comply with all prescripts as detailed in the POPIA relating to all information concerning Transnet.
5. In responding to this bid, Transnet acknowledges that it will obtain and have access to personal information of the Respondent. Transnet agrees that it shall only process the information disclosed by Respondent in their response to this bid for the purpose of evaluating and subsequent award of business and in accordance with any applicable law.
6. Transnet further agrees that in submitting any information or documentation requested in this RFQ, the Respondent is consenting to the further processing of their personal information for the purpose of, but not limited to, risk assessment, assurances, contract award, contract management, auditing, legal opinions/litigations, investigations (if applicable), document storage for the legislatively required period, destruction, de-identification and publishing of personal information by Transnet and/or its authorised appointed third parties.
7. Furthermore, Transnet will not otherwise modify, amend or alter any personal data submitted by the Respondent or disclose or permit the disclosure of any personal data to any third party without the prior written consent from the Respondent. Similarly, Transnet requires the Respondent to process any personal information disclosed by Transnet in the bidding process in the same manner.
8. Transnet shall, at all times, ensure compliance with any applicable laws put in place and maintain sufficient measures, policies and systems to manage and secure against all forms of risks to any information that may be shared or accessed pursuant to this RFQ (physically, through a computer or any other form of electronic communication).
9. Transnet shall notify the Respondent in writing of any unauthorised access to information, cybercrimes or suspected cybercrimes, in its knowledge and report such crimes or suspected crimes to the relevant authorities

in accordance with applicable laws, after becoming aware of such crimes or suspected crime. The Respondent must take all necessary remedial steps to mitigate the extent of the loss or compromise of personal information and to restore the integrity of the affected personal information as quickly as is possible.

10. The Respondent may, in writing, request Transnet to confirm and/or make available any personal information in its possession in relation to the Respondent and if such personal information has been accessed by third parties and the identity thereof in terms of the POPIA. The Respondent may further request that Transnet correct (excluding critical/mandatory or evaluation information), delete, destroy, withdraw consent or object to the processing of any personal information relating to the Respondent in Transnet's possession in terms of the provision of the POPIA and utilizing Form 2 of the POPIA Regulations.
11. In submitting any information or documentation requested in this RFQ, the Respondent is hereby consenting to the processing of their personal information for the purpose of this RFQ and further confirming that they are aware of their rights in terms of Section 5 of POPIA

**Respondents are required to provide consent below:**

<b>YES</b>		<b>NO</b>	
------------	--	-----------	--

12. Further, the Respondent declares that they have obtained all consents pertaining to other data subject's personal information included in its submission and thereby indemnifying Transnet against any civil or criminal action, administrative fines or other penalty or loss that may arise as a result of the processing of any personal information that the Respondent submitted.
13. The Respondent declares that the personal information submitted for the purpose of this RFQ is complete, accurate, not misleading, is up to date and may be updated where applicable.

Signature of Respondent's authorised representative: \_\_\_\_\_

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

# **ANNEXURE**

**A**



A Division of Transnet SOC Limited

# TECHNOLOGY MANAGEMENT

## SPECIFICATION

### THE MANUFACTURE OF 3 KV DC BREAKER CELLS AND TRUCKS

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

Three handwritten signatures in black ink, each written over a horizontal dashed line. The signatures correspond to the names listed in the table to the left.

Date: <sup>pp</sup> 21 August 2018

Circulation Restricted To:

Transnet Freight Rail - Rail Network  
- Technology Management

"I acknowledge that this application contains personal information as defined in the Protection of Personal Information Act, 2013 (the "Act"). By accessing/using this application, I consent to the processing of my personal information in accordance with the requirements of the Act. I acknowledge that I cannot unreasonably withhold my consent. I acknowledge that the purpose for processing my personal information is in terms of this application."

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**1.0 SCOPE**

This specification covers Transnet Freight Rail's requirements for the design and manufacture of a modular 3kV DC 2000A circuit breaker cell and truck for use on a 3kV DC traction system.

**2.0 STANDARDS AND PUBLICATIONS**

Unless otherwise specified all materials used and equipment developed and supplied shall comply with the current edition of the relevant SANS and Transnet freight rail's publications which are referred to in this specification:

**2.1 SOUTH AFRICAN NATIONAL STANDARDS**

SANS 1091: National Colour Standards.

SANS 1222: Enclosures for Electrical Equipment.

SANS 1274: Coatings applied by the powder-coating process.

**2.2 TRANSNET FREIGHT RAIL'S SPECIFICATIONS**

BBD5994: Technical Documentation Management Policy.

CEE.0045: Painting of Steel Components of Electrical Equipment.

CEE.0099: 3kV DC High Speed Circuit Breakers.

CEE.0224: Drawings, Catalogue, Instruction Manuals and Spares lists of Electrical equipment supplied under contract.

**2.3 TRANSNET FREIGHT RAIL'S DRAWINGS**

The following drawings form an integral part of this specification.

BBF1336: 3kV DC Circuit Breaker Components.

BBF1337: Secheron 3kV DC track breaker with DC Feeder protection relay.

BBF1338: EMC 3kV DC track breaker with DC Feeder protection relay.

CEE-TBP-42: Sheet 1. Connection Diagram for HSCB: New Breaker Cell.

CEE-TBP-42: Sheet 2 Connection Diagram for "ABB" HSCB: New Breaker Cell.

CEE-TBP-42: Sheet 3. Connection Diagram for "Ansaldo IR6003" HSCB: New Breaker Cell.

**3.0 DEFINITIONS**

AC: Alternating current.

Breaker: 3kV DC high speed circuit breaker.

Cell: Housing for circuit breaker and truck

DC: Direct current.

ECR: Electronic closing relay.

Truck: Circuit breaker mounted onto

**4.0 METHOD OF TENDERING**

4.1 Tenderers shall indicate clause by clause compliance with the specification. This shall take the form of a separate document listing all the specifications clause numbers indicating the individual statement of compliance or non-compliance.

4.2 A statement of non-compliance shall be motivated by the tenderer.

4.3 Tenderers shall submit descriptive literature consisting of detailed technical specifications, general constructional details and principal dimensions, together with clear illustrations of the equipment offered.

4.4 Failure to comply with clauses 4.1, 4.2, and 4.3 could preclude a tender from consideration.

## 5.0 APPENDIX

The following appendix forms an integral part of this specification:

Appendix 1 : List of drawings for both ECR and DC feeder protection relay.

## 6.0 SERVICE CONDITIONS

### 6.1 ENVIRONMENTAL CONDITIONS

The breaker cell, truck and associated equipment shall be designed and rated for operation under the following:

- 6.1.1 Altitude: 0 - 1800m above sea level.
- 6.1.2 Ambient temperature:  $-10^{\circ}$  C to  $+55^{\circ}$  C.
- 6.1.3 Relative humidity: 10% to 90%.
- 6.1.4 Lightning conditions: 20 ground Flashes/km<sup>2</sup>/annum.

### 6.2 ELECTRICAL CONDITIONS

- 6.2.1 The nominal Voltage shall be 3300 Volts. The lowest shall be 2250 V and highest being 3900 V.
- 6.2.2 The nominal Current shall be 2000 A and the highest being 4500 A.
- 6.2.3 The maximum fault current shall be or up to 55kA.

## 7.0 DRAWINGS AND INSTRUCTION MANUALS

Drawings and instruction manuals shall be in accordance to Transnet Freight Rail's specification CEE.0224 and technical documentation management policy BBD5994.

## 8.0 TECHNICAL REQUIREMENTS

### 8.1 BACKGROUND

The older types of circuit breaker cells are made from gas concrete, Asbestos and in combination with the trucks are outdated and difficult to erect. For this reason a new modular type of design, where cells could be easily erected, added or removed, is required. The specification depicts the requirements for modular one cell and one truck. It is required that any number of individual cells be coupled together to form a unit.

### 8.2 BREAKER CELL

- 8.2.1 The cell shall be constructed using a rigid steel frame with sheet metal enclosures. The dimensions shown in Appendix 1 exclude the framework and may be modified if necessary to accommodate the breaker truck. Any other changes in dimensions shall be submitted for approval to the office of Transnet Freight Rail's Senior Engineer (Electrical) – Technology Management.
- 8.2.2 The sides and back of the breaker cell shall be of mild steel sheet metal not less than 2mm thick.
- 8.2.3 The floor of the breaker cell shall be of mild steel sheet metal not less than 3mm thick.
- 8.2.4 Provision must be made on the floor of the cell for "Rawl" bolts to bolt the cell to the floor of the substation. On the sides of the cell provision must be made to bolt cells together.
- 8.2.5 The whole cell will be moved as a unit after construction and therefore special attention must be given by the tenderer to the mechanical strength of the cell, including provision for attachment of lifting gear.
- 8.2.6 On both sides of the cell, the control panel (right top of the side view) and 3kV DC incoming busbar (left top of busbar chambers) shall have removable panels for the future extension of the cells.
- 8.2.7 At the back of the cell the 3kV DC incoming and outgoing busbars must be accessible via removable panels. All of these removable panels shall be secured with bolts or screws.

8.2.8 A warning notice of plastic material (sandwich board) shall be mounted on each of the 3kV DC incoming busbar removable panels (at the back of all cells and the two side panels) and shall read as follows (Red on white):

**WARNING**

DO NOT REMOVE PANEL BEFORE ALL EQUIPMENT IS ISOLATED.

8.2.9 A warning notice of plastic material (sandwich board) shall be mounted on each of the 3kV outgoing busbar removable panels (at the back of all cells) and shall read as follows (Red on white):

**WARNING**

DO NOT REMOVE PANEL BEFORE TRACK SWITCH IS OPEN AND THE BREAKER WITHDRAWN.

- 8.2.10 The size of the notice boards shall be 200mm x 150mm with red letters on a white background. The words "WARNING" shall be bigger than the rest of the easily readable words on the notices.
- 8.2.11 The roof of the cell shall be of a flat piece of fire retardant glass fibre or similar insulation material.
- 8.2.12 Provision for cooling on a trunk of the 3kV DC breaker cells (fins on the front of the trunk) shall be made at the back of the cell and have the same capacity as the truck. If the DC feeder relay is installed then the cooling shall be through the roof.
- 8.2.13 The 3kV DC outgoing busbar chamber shall be completely isolated from the 3kV DC incoming busbar chamber and other adjacent 3kV DC outgoing busbar chambers.
- 8.2.14 Provision shall be made for the termination of a 3kV DC cable onto the 3kV outgoing busbar. This cable screen must be insulated from the cell and therefore insulation material must be provided where the cable is terminated in the cell. (150mm clearance from cable to metal parts and cable chambers must stay individual).
- 8.2.15 Details of the 3kV incoming and outgoing busbar must be cable entry at the bottom chamber and busbar entry. The 3kV incoming and outgoing busbars must be able to handle a continuous DC current of 2000A. (Size of copper busbar: 100mm x 10mm.)
- 8.2.16 The 3kV incoming and outgoing busbars shall be fitted on synthetic insulators with the necessary tensile strength. (150mm clear from metal).
- 8.2.17 The whole busbar system must withstand the stresses created when the truck is pushed into or pulled out of the cell. The insulators must therefore be mounted on a steel frame in the cell and not only on the sheet metal.
- 8.2.18 Provision shall be made on the 3kV DC incoming busbar and the earth busbar to extend them from one cell to another. The extension busbar pieces (slotted) shall be provided by the tenderer.
- 8.2.19 The earth busbar shall not be less than half the size of the 3kV DC busbars and must be electrically connected to all the metal parts of the cell. The earth busbar must be able to handle 1500A continuously.
- 8.2.20 From the earth busbar a solid connection point for the truck shall be provided. This connection shall make when the truck is pushed into the cell so as to earth the truck before the main 3kV contacts make.
- 8.2.21 The opening which provides access to the cell's main 3kV contacts shall be covered by a non conductive, fire retardant material if the cell contacts are closer than 100mm to the shutter, otherwise metal can be used.
- 8.2.22 This shutter shall automatically open to give access to both main contacts as the truck enters the cell and shall close as the truck is removed from the cell.
- 8.2.23 Under no circumstances shall it be to come into contact with the 3kV DC incoming or 3kV DC outgoing busbars if the truck is removed from the cell.

- 8.2.24 This shutter shall be lockable by hand and automatically mechanically lock itself in the closed position with the truck removed from the cell. The shutter shall automatically unlock and open while the truck is pushed back into the cell. The shutter mechanism shall be developed by the tenderer.
- 8.2.25 In the control panel, three busbars must be provided for the operating supply of 110V DC to the breakers. The 110V busbars must be able to handle a continuous DC current of 30A.
- 8.2.26 Provision shall be made on all three busbars to extend them from one cell to another. The extension busbar pieces (slotted) shall be provided by the tenderer.
- 8.2.27 The 110V DC busbars shall be colour coded using a heat shrink method and shall be insulated from the metal cell via insulators. The top busbar shall be the negative 110V DC busbar and shall be coloured black. The second from top busbar shall be the positive 110V DC busbar and shall be coloured red. The third from the top and last busbar shall be the holding coil supply and shall be coloured grey.
- 8.2.28 On the front door of the control panel the ECR or DC feeder protection relay and receivers – (Current and voltage), open/close switch, local/remote switch, five miniature DC circuit breakers and three lights shall be mounted in a correct order(Close, lockout and open). On the inside of the control panel a terminal strip, limiting resistors and 154X relay or similar relay approved by Transnet Freight Rail – Technology Management, depending on the breaker used shall be fitted.
- 8.2.29 The tender shall supply all equipment as follows:
- 8.2.29.1 Three 110V LED's with red, yellow and green plastic covers for the indication lights.
- 8.2.29.2 A 110V, 15A double pole make before break switch for the local/remote switch.
- 8.2.29.3 A 110V, 15A switch, similar to the local/remote switch, for the open/close switch.
- 8.2.29.4 Three 2A, 110V DC circuit breakers and two 5A, 110V DC circuit breakers must be provided for the control of each breaker. The tenderer shall be notified in advance of which type of breaker will be used.
- 8.2.29.5 All the interconnections shall be done with 2,5mm square stranded copper wires. The interconnections shall be done according to drawing no. CEE-TBP-42 and the terminal strip shall be clearly marked as in this drawing.
- 8.2.29.6 A single 10 core control cable, 2,5mm square stranded copper per core, shall be provided for the connections to the breaker. This cable shall be fixed to the cell.
- 8.2.29.7 A connector that can be mounted on the breaker truck must also be provided to fit the 20 core cable connector.
- 8.2.29.8 The control cable shall be mechanically strengthened by a steel cable, running parallel with the control cable, of a shorter length. This steel cable must be fixed to the control cable connector and the breaker cell. The length of the cable shall allow the breaker truck to be fully removed from the cell for service purposes.
- 8.2.29.9 On returning the breaker truck to the breaker cell, the cable slack shall be taken in automatically in such a way that it is 150mm away from the breaker and out of the way of the operator.
- 8.2.30 Breaker cell – metal enclosure shall be as follows:
- 8.2.30.1 All the side walls of the breaker cell enclosure shall be covered with an insulation material of 4mm thickness and no metal parts from side walls shall protrude the insulation material.
- 8.2.30.2 The insulation material to be used shall be of polycarbonate panels.
- 8.2.30.3 The insulation panels shall be installed on insulators and they shall be in such a manner that they don't interfere with the removal and inserting of the breaker.

### 8.3 BREAKER TRUCK

- 8.3.1 The breaker truck's dimensions make provision for the latest designs of breakers.
- 8.3.2 The truck shall consist of a rigid steel frame with a mild steel sheet metal front panel. All dimensions shown are outer dimensions and shall not be changed without the approval of the office of Transnet Freight Rail's Senior Engineer (Electrical) in Technology Management.
- 8.3.3 The breaker must not be accessible, in any way, if the breaker is in service. The cooling fins in the front panel must therefore be constructed as shown.
- 8.3.4 The cell and truck shall be vermin proof when the breaker is in service.
- 8.3.5 Provision for the mounting of a breaker is made via a mounting plate.
- 8.3.6 The safety precautions to be followed when operating the bar.
- 8.3.6.1 The operator must open the breaker via the open/close switch whenever he removes the breaker from the cell or returns it to the cell. For a safety measure an electrical interlocking system must be implemented through the operating bar.
- 8.3.6.2 With the operating bar in the "OPEN" position, it shall open the breaker if the operator fails to do so via the open/close switch.
- 8.3.6.3 With the operating bar in the "OPEN" position, the truck would be free to be removed from the cell and returned to the cell.
- 8.3.6.4 With the operating bar in the "CLOSE" position, it shall be possible to operate the breaker. This will enable the operator to operate the breaker via the open/close switch.
- 8.3.6.5 With the operating bar in the "CLOSE" position and the truck fully entered in the cell, it shall not be possible to remove the truck from the cell.
- 8.3.6.6 After removal of the truck from the cell, it shall be possible for the operator to push the operating bar from the "OPEN" position to the "CLOSE" position. With the operating bar in the "CLOSE" position, it shall not be possible for the main contacts to be closed. The distance between the main 3kV DC contacts, mounted on the truck, and main 3kV busbar contacts shall not be less than 150mm.
- 8.3.6.7 With the operating bar in the "CLOSE" position and the truck removed from the cell, it shall be possible to test/calibrate the breaker.
- 8.3.6.8 When the breaker is put back into service, by using the operating bar on the front panel, the truck must be pushed into the cell for the main contacts to connect properly. When the truck has fully entered the cell, the operating bar must lock the truck in this position.
- 8.3.6.9 The breaker must now be controlled by the switches on the control panel. The operating bar mechanism shall be developed by the tenderer.
- 8.3.7 The truck and cell must have a guide system similar to the present rail (cell) and wheel (truck) system to guide the truck to make a proper connection between the main 3kV DC busbar contacts and main 3kV DC contacts, mounted on the truck.
- 8.3.8 The truck must be fitted with a copper earthing contact, in the middle under the truck, which is electrically connected to all the metal parts of the truck. This contact shall be electrically connected with the earth busbar in the cell before the main contacts are connected, when the truck enters the cell.
- 8.3.9 The main 3kV DC contacts, mounted on the truck, shall be of the female type (covered on the outside by insulation material if clearance between cell steel work and contact is less than 75mm), fit properly (electrically and mechanically) over the main 3kV DC busbar contacts and shall be rated to carry a continuous current of 2000A.
- 8.3.9.1 The temperature rise of the main contacts (copper) shall not exceed 55 degrees Celsius while passing the continuous rated current.

8.3.9.2 The main 3kV DC contacts, mounted on the truck, shall be solidly mounted on fire retardant insulating material with the nearest metal part of the truck 150mm away.

#### **8.4 ECR OR DC FEEDER PROTECTION RELAY**

8.4.1 The ECR must be Transnet Freight Rail (TFR) approved according to the TFR design and drawings.

8.4.2 The DC feeder protection relay must be Transnet Freight Rail approved.

8.4.3 The relay and all its associated equipment must work on 110V DC.

8.4.4 The receivers for voltage and current must be mounted in a control cubicle and must get the input from the transducer via fibre optic.

8.4.5 The fibre optic shall not be in the same trunk or pipe as the control wires.

8.4.6 The transducer shall not have 3kV DC on the more positive connection if the line test contacts on the High Speed Circuit Breaker are closed.

8.4.7 The DC feeder protection relay shall have the Resistor, Contactor (Line test), Transducer, Voltage receiver, Current receiver and the relay.

8.4.8 The relay reset button and two receivers shall be mounted in the control cabin.

8.4.9 The transducer, resistor and line test relay shall be mounted above the busbar chamber but in a separate chamber.

8.4.10 The shunt shall be mounted on the cable side of the busbar on the breaker (4000A, 50mV shunt).

8.4.11 The equipment required for the DC feeder protection relay shall be installed on top of the busbar chamber at the back of the breaker cell and truck.

8.4.12 Sufficient airflow/ventilation shall be provided for the resistors at the top roof of its compartment.

8.4.13 The 3kV DC circuit of the feeder protection relay shall be disconnected from the main 3kV DC circuit in the event of the circuit breaker/truck being removed from the cell.

8.4.14 Wiring in the 3kV DC circuit breaker shall be of high voltage.

8.4.15 Low voltage, high voltage and fibre optic wiring shall be separately installed in its own piping/tubing.

8.4.16 Wiring installed from the front panel to the back of the cell shall be installed in separate pipes. Where one shall be for the control purposes (At 110V DC) and the other for the fibre optic.

8.4.17 High Speed Circuit breaker installed shall be in accordance to specification CEE 0099.

8.4.18 The 3kV DC circuit breaker shall be Bi-directional type.

8.4.19 In the event of 3kV DC circuit breaker being controlled by feeder protection relays an intertripping circuit/coil shall be provided.

#### **9.0 PAINTING**

9.1 All equipment shall be painted in accordance with Transnet Freight Rail Infrastructure (Electrical) specification CEE.0045. The finishing coats shall be of the colours specified below.

9.2 Colour code numbers shall be in accordance to SANS 1091.

9.2.1 Exterior of the breaker cell and truck and roof: - Eau-de nil.

9.2.2 Interior of the cell and the truck frame :- White (Gloss) fire retardant paint.

9.3 Coatings applied by powder shall be in accordance to SANS 1274.

#### **10.0 INSULATION LEVELS**

10.1 The minimum clearance distance in air that shall apply from the 3kV DC circuit to the auxiliary circuits and to the steel work of the cell and truck shall be 150mm, except for the 3kV DC busbar

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configuration, where it may be reduced to 75mm. Alternatively, double insulation or barriers shall be provided.

- 10.2 The insulation between the 3kV DC circuit and the auxiliary circuits and the steel work of the cell and truck shall be capable of withstanding a test voltage of 10,5kV AC 50Hz for one minute.

**11.0 TESTS BY TRANSNET FREIGHT RAIL**

- 11.1 Transnet Freight Rail reserves the right to test a cell, truck and main contacts for compliance with the following clauses.

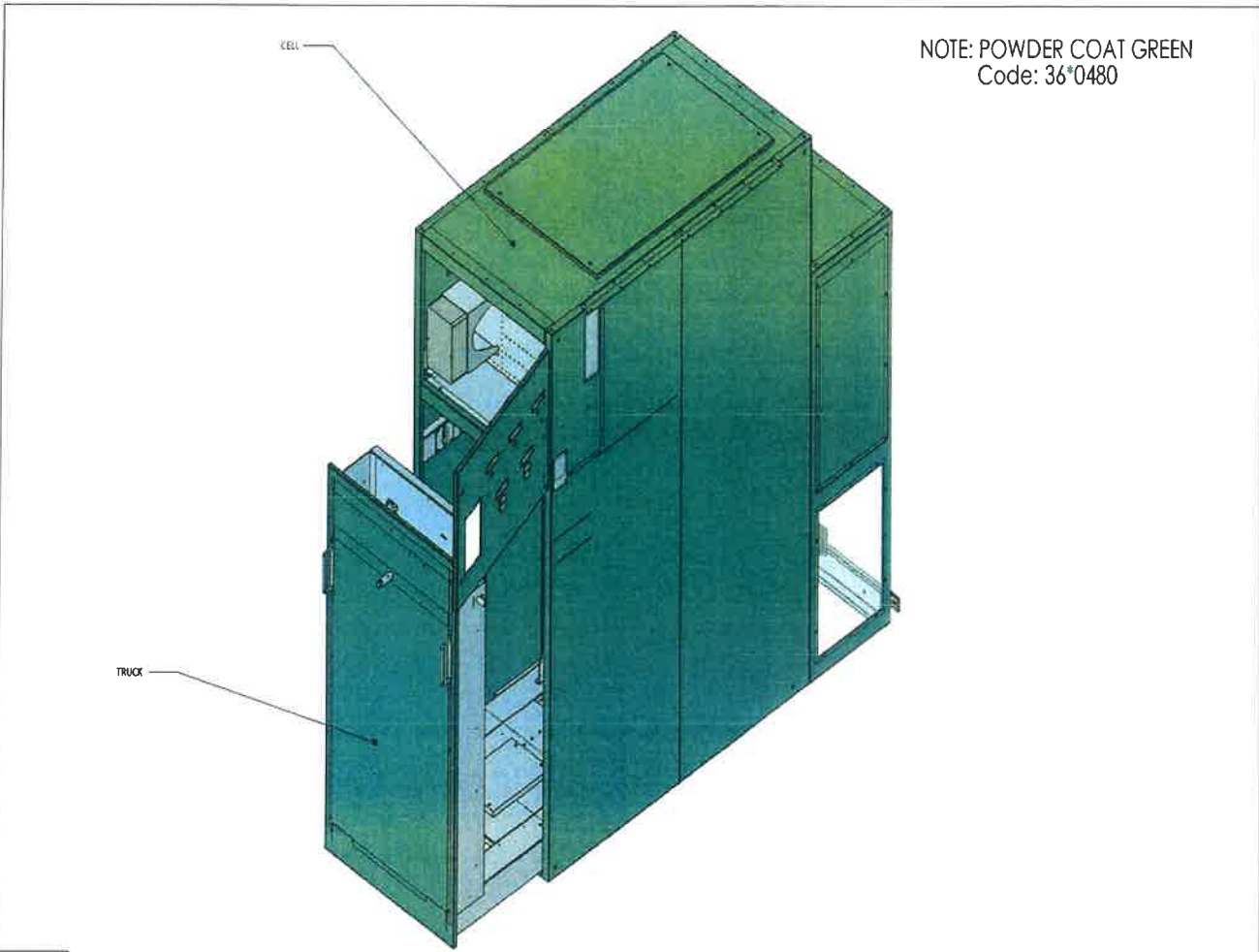
11.1.1 Insulation tests, clauses 10.1 and 10.2.

11.1.2 Temperature rise of the main contacts, clause 8.3.9.2.

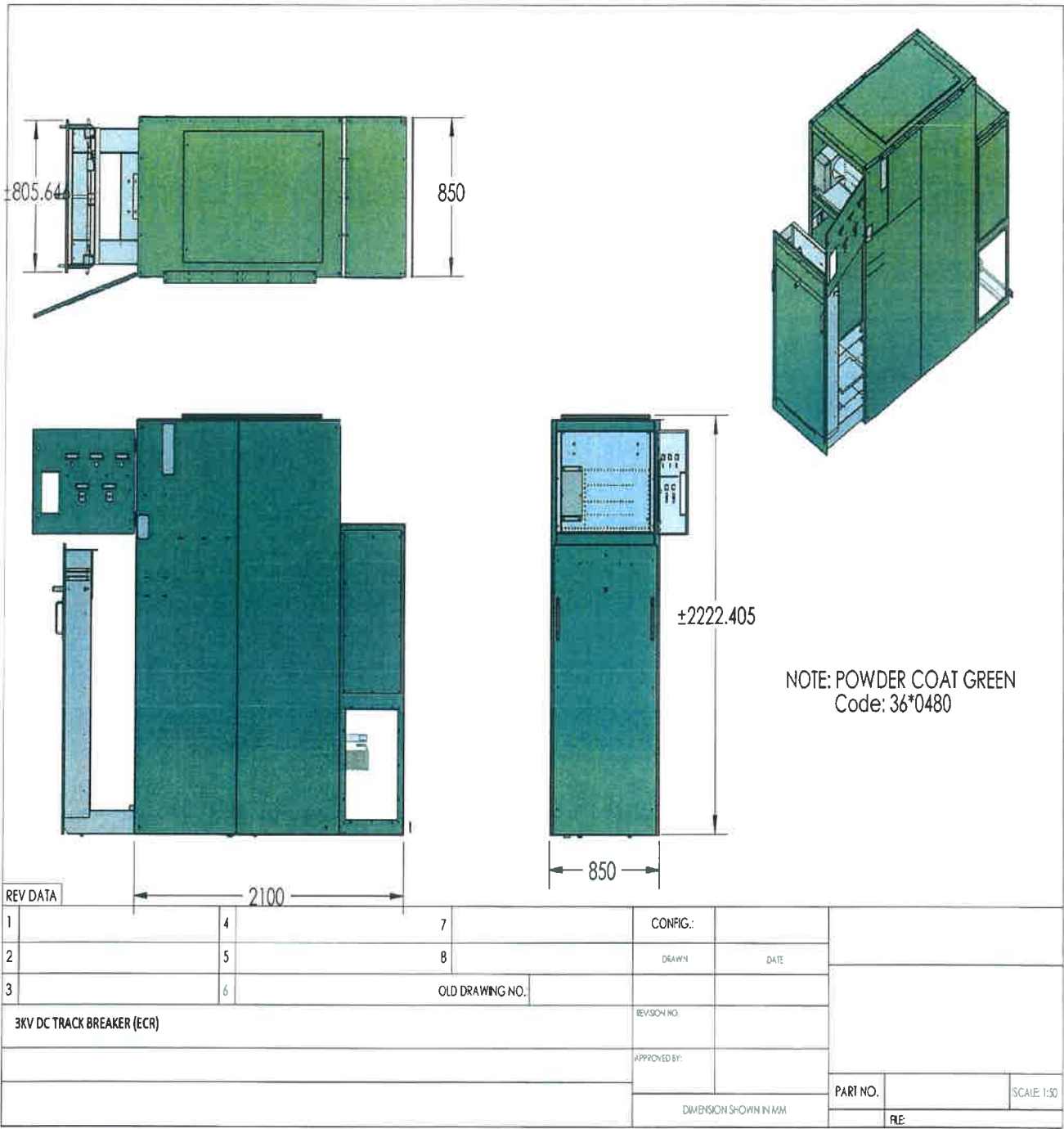
**12.0 PROTOTYPE**

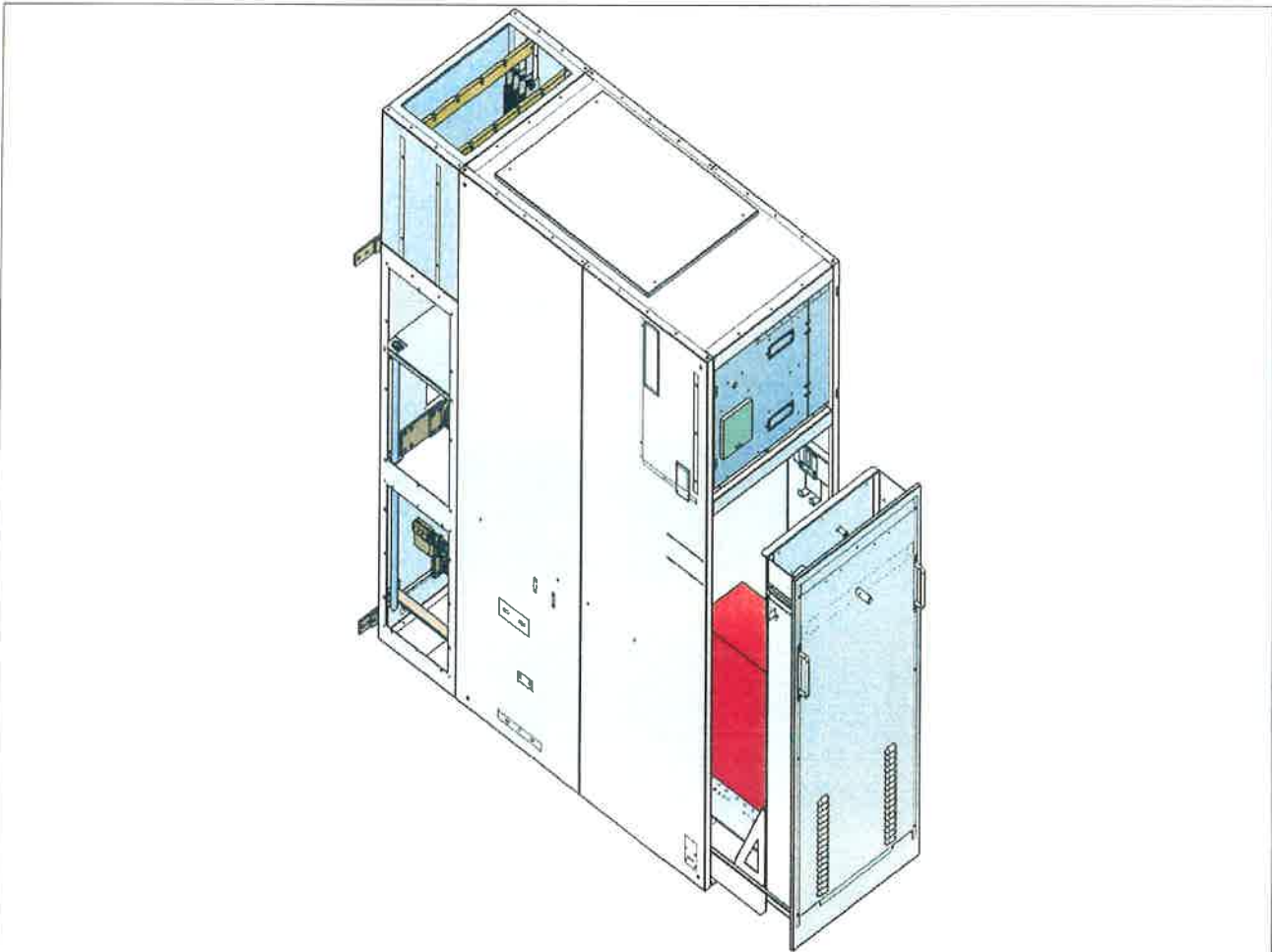
One prototype of the breaker cell and truck shall be provided for evaluation by Transnet Freight Rail, before the balance of the order is built.

**13.0 APPENDIX 1**  
**LIST OF DRAWINGS**

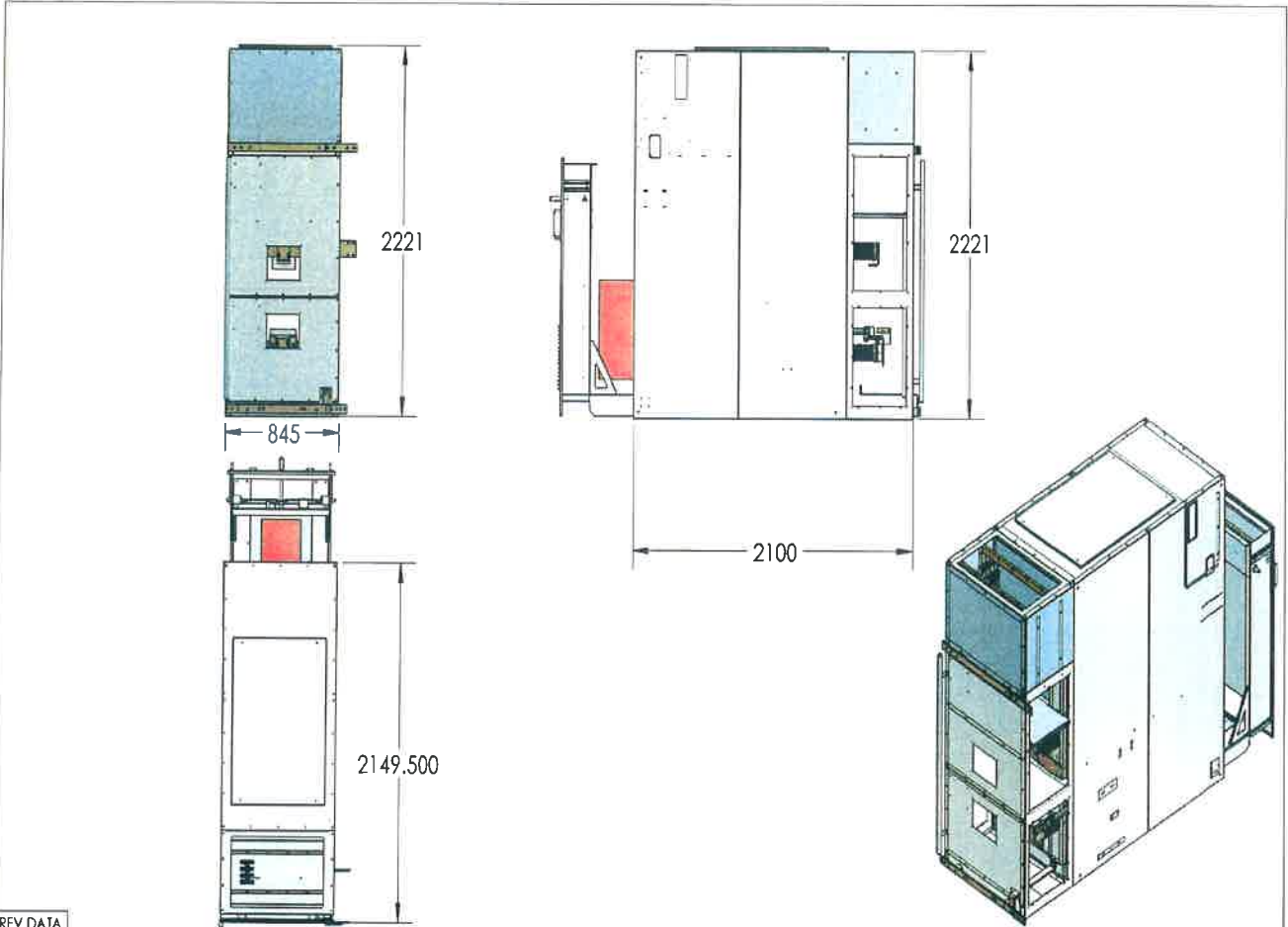


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						APPROVED BY:	
						DIMENSION SHOWN IN MM	
						PART NO.	SCALE 1:50
						FILE	

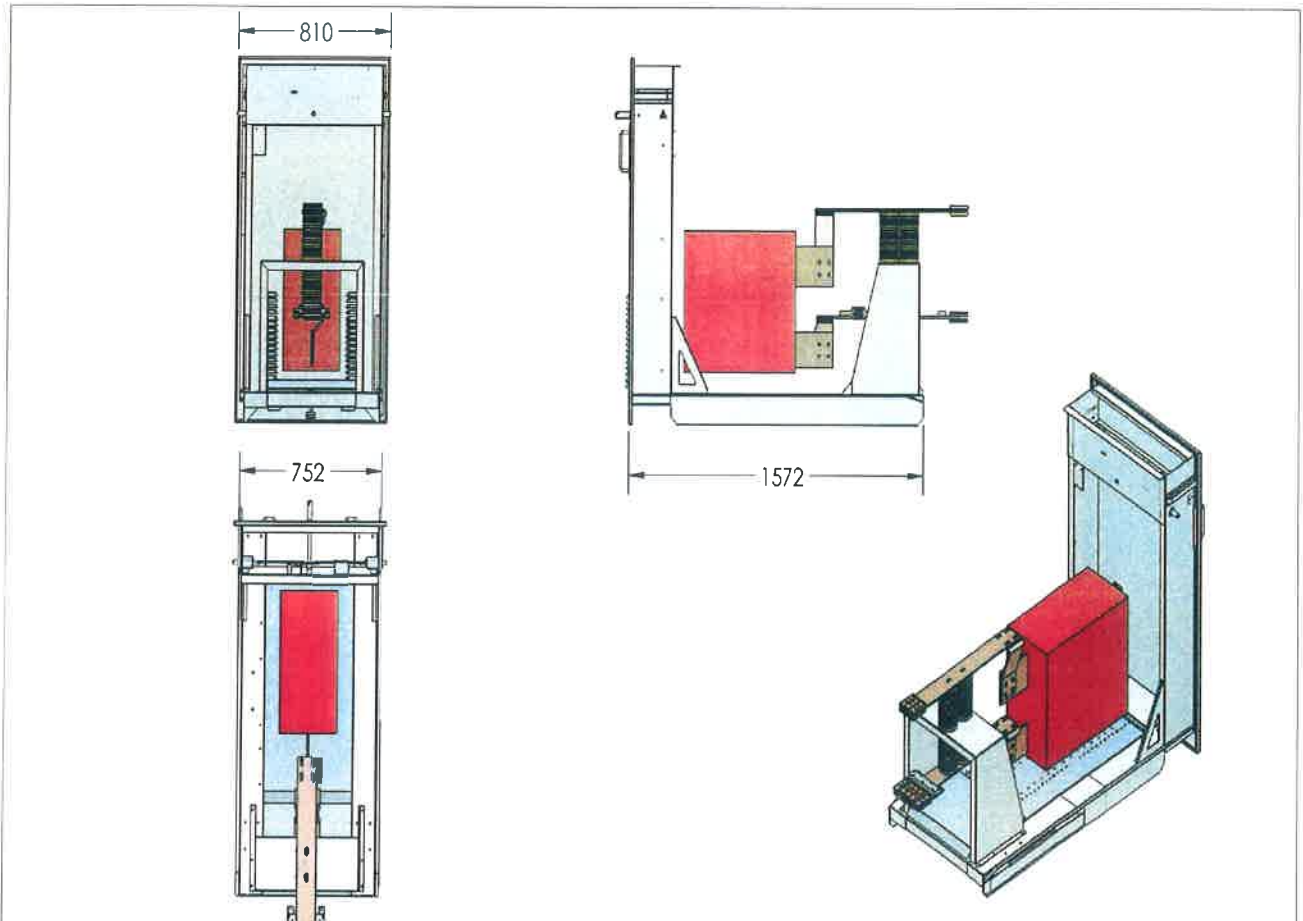




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2		5	8	DRAWN	DATE	
3		6	OLD DRAWING NO.:			
3KV DC TRACK BREAKER (DC FEEDER PROTECTION RELAY)				REVISION NO.		
				APPROVED BY:		
				DIMENSION SHOWN IN MM	PART NO	SCALE 1:30
					FILE	



REV DATA		4	7	CONFIG:	
1				DRAWN	DATE
2		5	8		
3		6	OLD DRAWING NO.		
3KV DC TRACK BREAKER (DC FEEDER PROTECTION RELAY)				REVISON NO.	
				APPROVED BY	
				DIMENSION SHOWN IN: MM	PART NO. FILE
					SCALE: 1:50



REV DATA				CONFIG.:		
1		4	7	DRAWN	DATE	
2		5	8			
3		6	OLD DRAWING NO.			
<b>3KV DC TRACK BREAKER</b>				REVISION NO.:		
				APPROVED BY:		
				DIMENSION SHOWN IN MM	PART NO	SCALE: 1:33.3
					FILE:	



**TRANSNET**  
freight rail

A division of Transnet SOC Limited

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## TECHNOLOGY MANAGEMENT

### SPECIFICATION

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# 3 KILOVOLTS DC HIGH SPEED CIRCUIT BREAKERS FOR TRACTION SUBSTATIONS

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Technology Management

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Approved: Senior Engineer  
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Authorised: Principal Engineer  
Technology Management

S.E. Sibande

Date: 16 August 2013

Circulation restricted to:

Transnet Freight Rail

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## 1.0 SCOPE

This specification covers Transnet Freight Rail's requirements for the supply of 3kV DC, high speed circuit breakers for use on a DC electrified railway systems.

## 2.0 APPENDICES

The following appendices form an integral part of this specification:-

- 2.1 Appendix 1: List of drawings.
- 2.2 Appendix 2: Schedule of Specific Requirements.
- 2.3 Appendix 3: Technical Data Sheet (specific technical information to be furnished with tenders).
  - 2.3.1 Equipment offered in this appendix shall be supplied in terms of this specification and no changes or substitutes will be allowed without the written consent of Transnet Freight Rail.
  - 2.3.2 Acceptance by Transnet Freight Rail's Technology Management staff of the equipment offered in this appendix, in no way relieves the tenderer of his obligation to fulfil his statement of compliance with this specification.
  - 2.3.3 Transnet Freight Rail reserves the right to subject the material offered to tests and inspection to check compliance with the relevant clauses of this specification and/or the quality/performance claimed by the tenderer, prior to adjudication or at any stage during manufacture.

## 3.0 STANDARDS AND PUBLICATIONS

- 3.1 The following standard specifications (latest edition) are referred to in this document:

### 3.1.1 INTERNATIONAL ELECTROTECHNICAL COMMISSION

IEC 60947-2: Switchgear and Control gear

### 3.1.2 TRANSNET FREIGHT RAIL

CEE 0227: The design and manufacture of a modular 3kV DC, 2000A circuit breaker cell and truck for use on a 3kV DC traction system

BBB 0041: Preparation of drawings for Transnet Freight Rail Infrastructure.

BBD5994: Technical Documentation Management Policy

## 3.2 DEFINITIONS

All technical terms used in this specification shall have the definitions as per IEC 60947-2 section 2.

## 4.0 METHOD OF TENDERING

- 4.1 Tenderers shall indicate clause by clause compliance with the specification. This shall take the form of a separate document listing all the specifications clause numbers indicating the individual statement of compliance or non-compliance. This document can be used by tenderers to elaborate on their response to a clause.
- 4.2 A statement of non-compliance shall be motivated by the tenderer.

- 4.3 Tenderers shall submit descriptive literature consisting of detailed technical specifications, general constructional details and principal dimensions, together with clear illustrations of the equipment offered.
- 4.4 The Schedule of Requirements, Quantities and Prices, Appendix 1 to this specification shall be fully completed by Tenderers.
- 4.5 Failure to comply with clauses 4.1, 4.2, 4.3 and 4.4 could preclude a tender from consideration.

## 5.0 SERVICE CONDITIONS

The circuit breakers shall be designed and rated for operation under the following service conditions:

### 5.1 Atmospheric service conditions.

Altitude:	0 to 1800 m above sea level
Ambient temperature:	-10°C to +55°C.
Relative humidity:	10% to 90%
Lightning conditions:	15 Ground flashes per square kilometre per annum.
Pollution:	Heavily salt laden or polluted with smoke from industrial sources

### 5.2 Mechanical service conditions.

The substations in which the breakers are to be installed are situated next to the railway lines and the breakers will therefore be subjected to vibration.

### 5.3 Electrical service conditions.

- 5.3.1 The circuit breakers are required for the switching and protection of overhead track circuits, the rail being the negative return.
- 5.3.2 The system voltage is nominally 3.15kV DC, but varies during normal operation between 2,4kV and 3,9kV.
- 5.3.3 For the purpose of surge and lightning protection to the substation equipment, a 4 micro Farad capacitor is connected between the positive cable termination and negative rail. A Zinc Oxide surge arrester, having a residual voltage of 13kV, is also connected between the positive cable termination and earth mat.
- 5.3.4 The breakers are fed from sub- or tie-station busbars and calibrated to protect sections of overhead track equipment to which they are connected. Sub- and tie-stations are unattended but remote controlled.
- 5.3.5 Circuit conditions under which track breakers operate vary over a wide range. The following information is considered typical:
- 5.3.5.1 Substation spacing: On open lines it varies from 10 to 25 km, whilst in heavily loaded, multi track areas it varies from 3 to 10 km.
- 5.3.5.2 Substation capacity: The installed capacities vary from 3MW to 12MW, with individual rectifier capacities varying from 3MW to 6MW.

5.3.6 The substation has the following overload ratings:

200 percent for 30 minutes

Short circuit proof for 200 milliseconds.

5.3.7 Typical fault conditions.

	Fault near sub	Fault remote from sub.
Prospective current	50kA	10kA
Time constant	10ms	45ms

5.3.8 All substations on a section normally work in parallel.

5.3.9 The breakers will be fitted with single shot 20 second interval auto reclosing relays. The breakers will be remote controlled, permitting re-closures to be attempted from remote at approximately 2 minute intervals.

## 6.0 LIFE CYCLE COST

6.1 The cost of the high speed circuit breaker is not the only deciding factor when purchasing high speed circuit breakers. Life cycle cost will be taken into account when evaluating the offers made.

6.2 The life cycle cost will be based on maintenance history in Transnet Freight Rail. The following information shall be submitted by the tenderer.

6.2.1 A separate quotation for the recommended spares Transnet Freight Rail should acquire for normal maintenance purposes to cover expected requirements for a five year operating period, per 20 breakers purchased, indicating the price per item.

6.2.2 A separate quotation for any special tools required, for the maintenance of breakers.

6.2.3 A separate quotation for any other items required, to adapt the breakers to fit into Transnet Freight Rail's system.

6.2.4 A prescribed average maintenance requirement in man-hours per year per high speed circuit breaker, over a 25 year period.

6.3 The recommended quantity of spares and prescribed man-hours per year shall be based on 30 overload and fault trips per month per breaker. It is estimated that an average of 10 percent of all trips are due to faults.

## 7.0 DRAWINGS, INSTRUCTIONS AND CATALOGUES

7.1 Tenderers shall include in their tenders for the supply of operating and maintenance instruction manuals and drawings to enable the erection, maintenance, repair and adjustment of the breakers to be carried out.

7.1.1 The preparation of the drawings shall be in accordance with Transnet Freight Rail's specification BBB 0041.

7.1.2 The catalogues, instruction manuals and spares lists shall be in accordance with Transnet Freight Rail's technical documentation policy BBD5449.

7.1.3 One copy of the instruction manual must be supplied for every 4 breakers supplied, plus a further 10 copies.

- 7.2 Tenderers shall also include in their tenders for the supply of spare parts catalogues. These catalogues must contain detailed illustrations and descriptions, and suitably indexed pages reflecting:
- 7.2.1 Illustration item numbers, complete description of items including coil winding data and material, manufacturer's item numbers and Transnet Freight Rail stores item number (left blank).
- 7.2.2 One copy of the catalogue must be supplied for every 10 breakers supplied, plus a further 10 copies.
- 7.3 Proof copies of the drawings, instruction manuals and spare parts catalogues shall be submitted by the successful tenderer for approval as soon as possible after the business has been placed to enable the final copies to be supplied at the commencement of delivery of the breakers.
- 7.4 The successful tenderer shall supply Transnet Freight Rail with one complete set of detailed manufacturing drawings and specifications of all consumable items, i.e. of all coils, main and arcing contacts, arc chutes - and components, etc.

## **8.0 TECHNICAL REQUIREMENTS**

### **8.1 GENERAL**

- 8.1.1 The breakers shall have a minimum continuous rating of 2 000A and shall be suitable for operation under the service conditions described in clause 5.0.
- 8.1.2 The breakers shall be capable of clearing a prospective short circuit current of 50kA with a time constant of 10ms, 4 times in succession with time intervals of 20s, 60s and 120s between applications. It shall then still be capable of normal service without attention.
- 8.1.3 Consideration will only be given to those types of breakers which have been proved to operate satisfactorily on a 3kV DC traction system, under conditions comparable with those encountered on Transnet Freight Rail. Tenderers shall furnish full details (Appendix 3) in regard to experience, viz. approximate number of breakers of tendered design manufactured to date, dates of supply and where installed.
- 8.1.4 The breakers shall be mounted horizontally on the standard rack out type truck provided by Transnet Freight Rail to drawings referred to in Appendix 1 of this specification or in a modular circuit breaker cell as per specification CEE 0227.
- 8.1.5 The overall dimensions of a breaker, complete with arc chute, when mounted on this truck shall be such as to afford clear passage of the truck into the standard breaker cell, leading dimensions of which are indicated on the drawings.
- 8.1.6 The breakers shall operate satisfactorily in buildings where the roof details are as follows:
- 8.1.6.1 Concrete roof: minimum height 2,6m.
- 8.1.6.2 Roof consisting of steel members supporting Mica material/Asbestos free or metal sheeting: minimum height 3,25m.
- 8.1.7 All parts shall be interchangeable between breakers.
- 8.1.8 The breaker and arc chute shall be designed to require the minimum maintenance. The minimum maintenance interval shall be 250 trips at a trip setting of 4 000A at 3,2kV. Of these trips 10 percent may be fault trips.

## 8.2 INSULATION

- 8.2.1 The minimum clearance distance in air that shall apply from the 3kV DC circuit to the auxiliary circuits and to the steel base shall be 100mm. Alternatively, double insulation or barriers shall be provided.
- 8.2.2 The insulation between the 3kV DC circuit and (a) the auxiliary circuits and (b) the steel base shall be capable of withstanding a test voltage of 10,5kV (rms) 50Hz for one minute.
- 8.2.3 All low voltage auxiliary equipment shall be capable of withstanding a test voltage of 2kV (rms) 50Hz for one minute.
- 8.2.4 The circuit breaker shall be able to withstand the following 50Hz test voltages for 60 seconds between the open main contacts:
  - 8.2.4.1 With the arc chute removed: 10,5kV (rms).
  - 8.2.4.2 With the arc chute in its working position: 5,4kV (rms).
- 8.2.5 Full particulars of the insulation, including the class, shall be supplied.

## 8.3 CIRCUIT BREAKER

- 8.3.1 The circuit breaker shall be of the trip free type.
- 8.3.2 The method of closing, latching and the trip free feature shall be described in detail, with the use of drawings and sketches.
- 8.3.3 In the event of circuit breakers being offered that use mechanical latching (to be de-latched), the tenderer shall ensure that the circuit breakers will not malfunction to open due to the mechanical latching mechanism not operating correctly. Such mechanisms shall be suitably protected from dust or fragments from the arc chutes or contacts which can affect their satisfactory operation.
- 8.3.4 Main contacts, which are not self-cleaning, shall be of material which will not oxidise when the breakers are open or closed for lengthy periods.
- 8.3.5 Main contacts (or arcing contacts, if fitted) shall be tipped with material with a high resistance to arc erosion, welding and sticking.
- 8.3.6 Arcing contacts (if fitted) and main contacts shall be accessible for inspection and maintenance and shall be designed to facilitate any necessary adjustments and renewal.
- 8.3.7 The temperature rise limit of main contacts (if made of copper) shall not exceed 45 degrees Celsius while passing the continuous rated current.
- 8.3.8 It shall **not** be possible to close the breaker manually.
- 8.3.9 The breakers shall be designed to prevent dust or fragments from the arc chutes or contacts from affecting their satisfactory operation.
- 8.3.10 All adjustments shall be such that they can be easily effected. The need for special tools should be avoided.
- 8.3.11 Tenderers shall furnish full details of all adjustments which can be made, particularly of the main contact alignment and pressure, and where applicable of pole face and toggle mechanism.
- 8.3.12 In an event of circuit breaker not being able to trip with low voltage/over voltage tripping indirect tripping shall be provided.

- 8.3.13 The circuit breaker shall be able to operate as a normal contactor in the event of other relays such as DC feeder protection relays instructing it to open under fault conditions. There shall be no delay in clearing an Arc under these conditions. If required the circuit breaker shall be provided with an indirect tripping mechanisms.

#### **8.4 CALIBRATION**

- 8.4.1 The breakers may be either uni- or bi-directional tripping. Tenderers shall state what type is offered; giving details of the calibration ranges for both the forward and reverse current tripping.
- 8.4.2 A scale plate, indicating the maximum and minimum trip settings and at least five intermediate graduations shall be provided on each breaker at the calibration adjustment position.
- 8.4.3 The calibration range for the forward direction shall be from 2 000A to 5 000A.
- 8.4.4 The calibration range for the reverse direction (if reverse tripping is possible) shall be at least the same as that of the forward direction.
- 8.4.5 Tenderers shall indicate clearly the means whereby the above calibration ranges are provided.
- 8.4.6 The stability at any particular setting shall be such that the current required to trip the breaker shall not vary by more than 2 percent below or above the set calibrated value when calibration is checked under similar conditions.
- 8.4.7 The breaker design shall incorporate features to ensure that the breakers can be closed satisfactorily on to a steady (residual) load of not less than 60 percent of any particular calibration setting.

#### **8.5 ARC CHUTES**

- 8.5.1 Arc chutes manufactured from asbestos cement shall not be accepted. Arc chutes made of low maintenance materials are preferred. Tenderers shall specify what materials are used.
- 8.5.2 Transnet Freight Rail would prefer an offer of an arc chute incorporating a removable metal splitter plate design.
- 8.5.3 Materials used in arc chutes must be of a type that is easily cleaned.
- 8.5.4 The arc chutes shall be constructed as to render the contacts easily accessible by removal of separate parts of the arc chutes as a unit.
- 8.5.5 Tenderers shall submit full details of the principles of operation of the arc chute, as well as sketches and drawings of the various components and assemblies. Details of the maintenance and repairs that can/should be done, and at what intervals, shall also be furnished.

#### **8.6 AUXILIARY CONTACTS**

- 8.6.1 Auxiliary contacts for operating in conjunction with the indication and control circuits shall be located well clear of the arc chutes and main contacts.
- 8.6.2 The auxiliary contacts shall be of robust construction and tipped with silver or other suitable material.
- 8.6.3 At least six auxiliary contacts which close ('a' contacts) and six auxiliary contacts which open ('b' contacts) when the breaker closes shall be provided and mounted on each breaker.

- 8.6.4 A robust, dust tight, non-metallic non-flammable cover for the auxiliary contacts shall be provided on each breaker to prevent ionised air from the 3kV DC circuit or dust causing flashovers or tracking. Hard plastic covers are not acceptable.

## **8.7 CONTROL CIRCUITRY**

- 8.7.1 The circuit breaker shall be operated either with DC Feeder Protection relay or with Auto Re-closure relay.
- 8.7.2 Drawings BBF1337, BBF1338, CEE-TBP-35, 39, 40, 41, 42 and 44 reflect the control schematic diagram of circuit breakers in use at present.
- 8.7.3 The DC feeder protection relays being used shall be in accordance to specification BBG0894.
- 8.7.4 The closing and control circuits are supplied from 110V DC battery under constant trickle charge. The equipment shall be capable of satisfactory continuous operation at any voltage between the limits of 90V and 140V.
- 8.7.5 In order to ensure constant calibration, the holding coil is normally supplied from a separate constant 110V DC source.
- 8.7.6 The circuit breakers shall be suitable for operation from the above stated supplies.
- 8.7.7 The remote control equipment (DC feeder protection or Auto re-closure relays), control relays, indication lights, control switches and reclosing relays shown on drawings CEE-TBP-35 and 39 will be provided by Transnet Freight Rail.
- 8.7.8 All other items of equipment required to enable the breakers to operate correctly, without any alterations to the standard wiring circuitry provided by Transnet Freight Rail, shall be included in the tenderer offers.
- 8.7.9 The design of the breakers and control circuitry shall be such that the breakers shall "fail to safety", particularly on loss of the low voltage control supplies.

## **8.8 TESTS AND OSCILLOGRAMS**

- 8.8.1 Short circuit tests shall be carried out on breakers connected to a 3kV DC system with similar fault currents to that which is specified in clause 5.3.7 and oscillograms thereof shall be submitted with the tenderers offers. For the purpose of the test the breakers shall be calibrated at 4 500A.
- 8.8.2 The following shall be clearly indicated on the oscillogram traces:
- 8.8.2.1 Commencement of short circuit.
- 8.8.2.2 Opening time, i.e. time from the application of the short circuit to initial opening of the arc breaking contacts.
- 8.8.2.3 Arcing time.
- 8.8.2.4 Arc voltage (Transient recovery voltage).
- 8.8.2.5 Rate of rise of current.
- 8.8.2.6 Prospective peak current.

## **9.0 TESTS BY TRANSNET FREIGHT RAIL AND TYPE TEST CERTIFICATES**

- 9.1 Transnet Freight Rail reserves the right to test a circuit breaker, selected at random, for compliance with any or all of the following clauses.
- 9.1.1 Fault clearing test, clause 8.1.2.

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- 9.1.2 A maintenance interval test (an in service test), clause 8.1.8.
  - 9.1.3 Insulation tests, clause 8.2.2 to 8.2.5.
  - 9.1.4 Temperature rise of the main contacts, clause 8.3.7.
  - 9.1.5 Stability of calibration, clause 8.4.6.
  - 9.1.6 Closing on to a steady (residual) load, clause 8.4.7.
  - 9.1.7 Breaker "fail to safety" feature, clause 8.7.9.
  - 9.2 The tenderer shall provide type test certificates to confirm that the breakers comply with the requirements as specified in clauses 9.1.1 to 9.1.7.

## **10.0 PACKING**

- 10.1 Each circuit breaker shall be completely assembled and operationally checked before packing and dispatch.
- 10.2 The circuit breakers and arc chutes shall be packed separately.
- 10.3 The breakers shall be bolted down to substantial battens firmly secured to the packing cases to prevent movement of the breakers in the cases during transit. The packing cases shall be of substantial construction to prevent damage to the breaker by rough handling. The bases of the cases shall be suitable for handling with a fork lift truck.
- 10.4 The interiors of the cases shall be lined with waterproof paper or other suitable material.

## **11.0 INSPECTION**

- 11.1 An Inspection Certificate will be issued by Technology Management – Electrical Technology to certify that material / equipment conforms to Transnet Freight Rail's requirement.

**END**

**SCHEDULE OF DRAWINGS****LIST OF DRAWINGS**

## DRAWINGS ISSUED WITH THIS SPECIFICATION

DRAWING NUMBER	DESCRIPTION
CEE-TBP-35	Wiring diagram: H.S.C.B, Electronic Control Relay
CEE-TBP-39	Circuit diagram; H.S.C.B, Electronic Control Relay
CEE-TBP-40	Truck circuit diagram
CEE-TBP-41	Truck wiring diagram
CEE-TBP-42	Connection diagram for HSCB
CEE-TBP-44	Connection diagram for Ansaldo IR6003 HSCB
CEE-TCQ-63	Assembly of lightweight concrete cell with H.S.C.B. truck in position.
CEE-TCQ-69 Sheet 1	Truck frame assembly H.S.C.B.
BBF1336	List of Components
BBF1337	Secheron Breaker fitted with DC feeder protection relay
BBF1338	EMC Breaker fitted with DC feeder protection relay

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## SCHEDULE OF REQUIREMENTS

Supply of the 110V closing contactor 154X as depicted on drawing CEE-TBP-35 if required.

**TECHNICAL DATA SHEET**

(To be completed by tenderers and submitted as part of their tender)

1. Make of breaker: \_\_\_\_\_
2. Experience with tendered design of breaker: (Clause 8.1.3)

**NUMBER SUPPLIED****WHERE INSTALLED****DATE SUPPLIED**

<b><u>NUMBER SUPPLIED</u></b>	<b><u>WHERE INSTALLED</u></b>	<b><u>DATE SUPPLIED</u></b>

3. Continuous current rating of breaker (Amperes): \_\_\_\_\_
4. Rated voltage of breaker(Volts): \_\_\_\_\_
5. Mechanically latched Yes/No: \_\_\_\_\_
6. Magnetically latched Yes/No: \_\_\_\_\_
7. Main contact material: \_\_\_\_\_
8. Indirect tripping mechanism required Yes/No: \_\_\_\_\_
9. Arcing contacts fitted Yes/No: \_\_\_\_\_
10. Contact material of main contact (or arcing contact, if fitted)

\_\_\_\_\_