GEORGE MUNICIPALITY

BID DOCUMENT NUMBER: GMT023/25-26

TENDER FOR THE SUPPLY, DELIVERY AND OFF-LOADING OF STOCK: RING MAIN UNITS FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2028

ENQUIRIES: MR. DEON ESTERHUYSEN YORK STREET GEORGE (044) 801 1459	ISSUED BY: MUNICIPALITY OF GEORGE P O BOX 19 GEORGE 6530

SUMMARY FOR TENDER OPENING PURPOSES

NAME OF BIDDER: ……..……

SUPPLIER DATABASE NO.: MAAA …….……..

Total Rates (All Applicable Taxes Included)	**VARIOUS RATES**	
PREFERENCES CLAIMED FOR:		
B-BBEE Status Level of Contributor and Point Claimed:	Level: _____	Point Claimed: _____
Locality Status and Point Claimed:	Locality: _____	Point Claimed: _____

B-BBEE certificates submitted with the tender document MUST be VALID ORIGINAL B-BBEE CERTIFICATES or VALID CERTIFIED COPIES OF THE B-BBEE CERTIFICATES

TENDER CLOSES AT 12H00 ON MONDAY, 19 JANUARY 2026

INDEX

BIDDER CONTACT DETAILS

This information shall be used for any correspondence or contact with the bidder.

Please indicate whether you want to receive any correspondence via e-mail or send to your postal address by registered mail.

Name of Bidding Company:		**Mark choice of correspondence with X**
Postal Address:	.... Postal Code:	
E-mail Address:	.....	
Telephone Number:	.....	
Cellular Number:	.....	
Facsimile Number:	.....	

GEORGE MUNICIPALITY / GEORGE MUNISIPALITEIT
TENDER NUMBER / NOMMER:

Tenders are hereby invited for the **Supply, Delivery and off-loading of Stock: Ring Main Units from date of appointment until 30 June 2028.**

Completed tenders in a sealed envelope, clearly marked:

Tender No. GMT023/25-26 must be placed in the tender box at the George Municipality on the **Fifth Floor**, Directorate: Financial Services, Supply Chain Management, Civic Centre, 71 York Street, George by no later than **12:00** on **Monday, 19 January 2026**. Tenders will be opened on the same day in the Committee Room at 12:05. Late or unmarked tenders will not be considered. No posted tenders or tenders per fax or e-mail will be accepted.

Tender documents are available at a non-refundable deposit of R297.85 each from the Supply Chain Management Unit, **Fifth Floor**, Civic Centre, 71 York Street, George.

Tender documents are available on the George Municipality's website: www.george.gov.za, free of charge.

Tenders will be evaluated and awarded in terms of the Preferential Procurement Policy Framework Act (Act 5 of 2000) Regulations 2022; the George Municipality's Supply Chain Management Policy as well as the George Municipality's Preferential Procurement Policy, where 80 points will be scored for price and 20 points for B-BBEE status and Specific Goals.

For more information, contact Mr. Deon Esterhuysen at (044) 801 1459 or resterhuysen@george.gov.za.

The Municipality reserves the right to withdraw any invitation to tender and/or to readvertise or to reject any tender or to accept a part of it. The Municipality is not bound to accept the lowest or any tender.

An alternative tenderer may be appointed.

A TCS PIN for bidders' tax compliance information must be submitted with the tender document.

It will be required from the successful bidder to register on the Central Supplier Database (CSD).

MR. G LOUW
MUNICIPAL MANAGER
GEORGE MUNICIPALITY
GEORGE
6530

Tenders word hiermee ingewag vir die **Verskaffing, Aflewering en Aflaai van voorraad: Ring Hoofeenhede vanaf datum van aanstelling tot 30 Junie 2028.**

Voltooide tenders in 'n verseëlde koevert, duidelik gemerk:

Tender Nr. GMT023/25-26 moet voor **Maandag, 19 Januarie 2026** om **12:00** in die tender bus by die George Munisipaliteit op die **Vyfde Vloer**, Direktoraat: Finansiële Dienste, Voorsieningskanaal Bestuurseenheid, Burgersentrum, Yorkstraat 71, George geplaas word. Tenders sal om 12:05 dieselfde dag in die Komiteekamer oopgemaak word. Laat of ongemerkte tenders sal nie oorweeg word nie. Geen tenders per pos, faks of e-pos sal aanvaar word nie.

Tender dokumente is verkrygbaar teen 'n R297.85 nie-terugbetaalbare deposito elk by die Voorsieningskanaal Bestuurseenheid op die **Vyfde Vloer**, Burgersentrum, Yorkstraat 71, George.

Tender dokumente is gratis op die George Munisipaliteit se webblad beskikbaar: www.george.gov.za.

Tenders sal ge-evalueer en toegeken word in terme van die Wet op die Raamwerk vir Voorkeurverkrygingsbeleid (Wet 5 van 2000) Regulasies 2022; die George Munisipaliteit se Voorsieningskanaalbestuursbeleid sowel die George Munisipaliteit se Voorkeurverkrygingsbeleid, waar 80 punte ten opsigte van die prys en 20 punte ten opsigte van B-BBEE status en Spesifieke Doelwitte toegeken sal word.

Vir verdere inligting, kontak Mnr. Deon Esterhuysen by (044) 801 1459 of resterhuysen@george.gov.za.

Die Munisipaliteit behou die reg voor om enige versoek vir 'n tender terug te trek en/of te her-adverteer of enige tender te verwerp of gedeeltelik te aanvaar. Die Munisipaliteit is nie daartoe gebind om die laagste of enige tender te aanvaar nie.

'N alternatiewe tenderaar kan aangestel word.

'n "TCS PIN" vir tenderaars se belasting nakoming inligting moet ingesluit wees by die tender dokument.

Dit sal van die suksesvolle tenderaar verwag word om op die Sentrale Verskaffersdatabasis (SVD) te registreer.

MNR. G LOUW
MUNISIPALE BESTUURDER
GEORGE MUNISIPALITEIT
GEORGE
6530

INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR THE TENDER FOR THE SUPPLY, DELIVERY AND OFF-LOADING OF STOCK: RING MAIN UNITS FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2028

BID NUMBER: GMT023/25-26

CLOSING DATE: 19 January 2026

CLOSING TIME: 12:00

BID DOCUMENTS MUST BE DEPOSITED IN THE TENDER BOX SITUATED AT:
Supply Chain Management Unit The Civic Centre (5th Floor) York Street GEORGE

Bidders should ensure that bids are delivered timeously to the correct address. If the bid is late, it will not be accepted for consideration.

The bid box is open from 07:45 until 16:30, 5 days a week. Bids must be submitted on the Official Forms (NOT TO BE RE-TYPED).

B-BBEE certificates submitted with the tender documents MUST be a VALID ORIGINAL B-BBEE CERTIFICATE or VALID CERTIFIED COPY OF THE B-BBEE CERTIFICATE.

In the case of a Trust, Consortium or Joint Venture, they will qualify for points for their B-BBEE status level as a legal entity, provided that the entity submits their B-BBEE status level certificate.

This Bid is subject to the General Conditions of Contract (GCC) and, if applicable, any other Special Conditions of Contract.

This Bid will be evaluated and adjudicated according to the following criteria:

1. Relevant specifications;
2. Value for money;
3. Capacity to execute the contract;
4. PPPFA Regulations 2022.

NB: NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, PROVINCIAL GOVERNMENT OR MUNICIPALITY.

DETAILS OF TENDERER

Name of firm / entity / enterprise	
Trading as (if different from above)	
Postal address	Postal Code _____
Physical address	
Contact Details of the **Person Signing the Tender**:	Name: _____ Telephone: (___) _____ Fax: (___) _____ Cellular Number: _____ E-mail address: _____
Contact Details of the **Senior Manager Responsible for Overseeing Contract Performance**:	Name: _____ Telephone: (___) _____ Fax: (___) _____ Cellular Number: _____ E-mail address: _____
Contact Details of **Person Responsible for Accounts / Invoices**:	Name: _____ Telephone: (___) _____ Fax: (___) _____ Cellular Number: _____ E-mail address: _____

DETAILS OF TENDERING ENTITY'S BANK

I/We hereby authorize the Employer/Client to approach all or any of the following bank/s for the purposes of obtaining a financial reference:

DESCRIPTION OF BANK DETAIL	BANK DETAILS APPLICABLE TO TENDERER'S HEAD OFFICE
Name of bank	
Branch name	
Branch code	
Name of Account Holder	
Account number	
Type of Account	

Signature of Tenderer:_____

Date: _____

THE RESOLUTION TAKEN BY THE BOARD OF DIRECTORS / MEMBERS / PARTNERS

RESOLUTION of a meeting of the Board of Directors / Members / Partners of

_____
NAME OF TENDERER

Held at _____ on _____
(Place) (Date)

RESOLVED THAT:

1. The enterprise submits a Tender to the George Municipality in respect of the following:

   TENDER NUMBER:
   GMT023/25-26 – TENDER FOR THE SUPPLY, DELIVERY AND OFF-LOADING OF STOCK: RING MAIN UNITS FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2028

2. Mr/Mrs/Ms
   _____

   In his/her capacity as
   _____

   and who will sign as follows: _____
   (SPECIMAN SIGNATURE)

be, and is hereby, authorized to sign the Tender and any and all other documents and/or correspondence in connection with and relating to the Tender, as well as to sign any contract, and or all documentation resulting from the award of the Tender to the enterprise mentioned above.

Note: The resolution **must be signed by all the directors or members / partners** of the bidding enterprise. Should the space provided below not be sufficient for all the directors to sign, please provide a separate sheet in the same format below.

	Name	Capacity	Signature
1			
2			
3			
4			
5			

THE RESOLUTION TAKEN BY THE BOARD OF DIRECTORS OF A CONSORTIUM OR JOINT VENTURE

RESOLUTION of a meeting of the Board of Directors / Members / Partners of

_____
NAME OF TENDERER

Held at _____ on _____
(Place) (Date)

RESOLVED THAT:

1. The enterprise submits a Tender to the George Municipality in respect of the following:

TENDER NUMBER:
GMT023/25-26 – TENDER FOR THE SUPPLY, DELIVERY AND OFF-LOADING OF STOCK: RING MAIN UNITS FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2028

(list all the legally correct full names and registration numbers, if applicable, of the Enterprises forming the Consortium / Joint Venture):

_____
and

_____
and

_____

2. Mr/Mrs/Ms _____

   In his/her capacity as _____

   and who will sign as follows: _____
   (SPECIMAN SIGNATURE)

be, and is hereby, authorized to sign the Tender and any and all other documents and/or correspondence in connection with and relating to the Tender, as well as to sign any contract, and or all documentation resulting from the award of the Tender to the **Consortium / Joint Venture** enterprise mentioned above.

3. The enterprise in the form of a consortium or joint venture accept jointly and several liability with parties under item 1 above for the fulfillment of the obligations of the joint venture deriving from, and in any way connected with the contract to be entered into with the George Municipality in respect of the project described above under item 1.

4. The **Consortium / Joint Venture** enterprise chooses as its domicilium citandi et executandi for all purposes arising from this joint venture agreement and contract with the George Municipality in respect of the project under item 1:

(Physical Address)

_____

_____

Note: The resolution **must be signed by all the directors or members / partners** of the bidding enterprise. Should the space provided below not be sufficient for all the directors to sign, please provide a separate sheet in the same format below.

	Name	Capacity	Signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

JOINT VENTURE

Only to be completed if applicable

Name of Joint Venture:	
Names of Each Enterprise:	
(1) Name and Address of Enterprise:	
(2) Name and Address of Enterprise:	
(3) Name and Address of Enterprise:	
Has an original valid Tax Clearance Certificate been submitted for each enterprise?	YES ☐ NO ☐
CIDB Registration Number(s), if any:	

Submit your Joint Venture Agreement together with this annexure. <u>If no Joint Venture Agreement is submitted, your tender will be disqualified</u>.

SIGNED ON BEHALF OF JOINT VENTURE _____

SCHEDULE OF SUB-CONTRACTORS

The Bidder shall list below the sub-contractors he/she proposes to employ for part(s) of the works/goods/services.

If any or all of the sub-contractor/s listed hereunder are not approved subsequent to acceptance of the Tender, it shall in no way invalidate the Tender or the Contract, and the Tendered unit rates for the respective items of work shall remain final and binding even if a sub-contractor/s not listed below is approved by the Employer.

Sub-Contractor's Name	Work Activities to be undertaken by the Sub-Contractor/s	Work Recently Executed by Sub-Contractor/s

TENDER SPECIFICATIONS

12 kV METAL-ENCLOSED RING MAIN UNITS, EXTENSIBLE SWITCHGEAR AND BULK METERING UNITS

1 SCOPE OF SPECIFICATION

1.1 This specification provides for the manufacture, testing, supply, delivery and off-loading of 12 kV metal-enclosed ring main units, extensible switchgear and bulk metering units for indoor and outdoor installation, supply and installation of spares and SF6 gas replenishment and recovery.

2 DEFINITIONS

The following definitions apply to this specification:

2.1 Employer shall mean George Municipality, represented by the Director: Electrical Engineering Services and/or such other official or officials duly authorized thereto by the Director: Electrical Engineering Services.

2.2 Engineer shall mean the Director: Electrical Engineering Services or his duly appointed representative, or a firm of Consulting Engineers or another body appointed to act on behalf of the Director: Electrical Engineering Services.

3 NORMATIVE REFERENCES

3.1 The following documents contain provisions that, whether referenced in the text or not, constitute requirements of this specification. At the time of publication, the editions indicated were valid. All standards and specifications are subject to revision, and parties to agreements based on this specification are encouraged to investigate the possibility of applying the most recent editions of the documents listed below.

3.1.1 SANS 97 – Electric cables - Impregnated paper-insulated metal-sheathed cables for rated voltages 3,3/3,3 kV to 19/33 kV (excluding pressure assisted cables).
3.1.2 SANS 630 – Decorative high gloss enamel paint for interior and exterior use.
3.1.3 SANS 780 – Distribution transformers.

3.1.4 SANS 876 – Cable terminations and live conductors within air insulated enclosures (insulation co-ordination) for rated a.c. voltages of 7,2 kV and up to and including 36 kV.
3.1.5 SANS 1091 – National color standard.
3.1.6 SANS 1186-1 – Symbolic safety signs Part 1: Standard signs and general requirements.
3.1.7 SANS 1332 – Accessories for medium-voltage XLPE and impregnated paper-insulated power cables (3,8/6,6 kV to 19/33 kV).
3.1.8 SANS 1507-2 – Electrical cables with extruded solid dielectric insulation for fixed installation (300/500 V to 1 900/ 3 300) Part 2: Wiring Cables.
3.1.9 SANS 1874 – Metal enclosed ring main units for rated ac voltages above 1 kV and up to and including 36 kV.
3.1.10 SANS 9001 – Quality management systems – Requirements.
3.1.11 SANS 60137 – Insulated bushings for alternating voltages above 1 000 V.
3.1.12 SANS 60270 – High-voltage test techniques - Partial discharge measurements.
3.1.13 SANS 60282-1 – High-voltage fuses Part 1: Current limiting fuses.
3.1.14 SANS 60529 – Degree of Protection provided by Enclosures (IP Code).
3.1.15 SANS 60815-1 – Selection and dimensioning of high-voltage insulators intended for use in polluted conditions Part 1: Definitions, information and general principles.
3.1.16 SANS 61238-1 – Compression and mechanical connectors for power cables for rated voltages up to 30 kV (Um = 36 kV) Part 1: Test methods and requirements.
3.1.17 SANS 61243-5 – Live working – Voltage detectors Part 5: Voltage detecting systems (VDS).
3.1.18 SANS 61869-1 – Instrument transformers Part 1: General requirements.
3.1.19 SANS 61869-2 – Instrument transformers Part 2: Additional requirements for current transformers.
3.1.20 SANS 61869-3 – Instrument transformers Part 3: Additional requirements for Inductive voltage transformers.
3.1.21 SANS 62271-1 – High-voltage switchgear and control gear Part 1: Common specifications.
3.1.22 SANS 62271-100 – High-voltage switchgear and control gear Part 100: Alternating-current circuit-breakers.
3.1.23 SANS 62271-102 – High-voltage switchgear and control-gear – Alternating current disconnectors and earthing switches.

3.1.24 SANS 62271-103 – High-voltage switchgear and control-gear – Switches for rated voltages above 1 kV and less than 52 kV.
3.1.25 SANS 62271-105 – High-voltage switchgear and control-gear – Alternating current switch-fuse combinations.
3.1.26 SANS 62271-200 – High-voltage switchgear and control-gear – AC metal enclosed switchgear and control-gear for voltages above 1 kV and up to and including 52 kV.
3.1.27 SANS 62271-202 – High-voltage switchgear and control-gear – High voltage / low voltage prefabricated substation.
3.1.28 IEC 60255-1 – Measuring relays and protection equipment – Part 1: Common requirements.
3.1.29 IEC 60255-151 – Measuring relays and protection equipment – Part 151: Functional requirements for over / under current protection.
3.1.30 IEC 60376 – Specification of technical grade Sulphur hexafluoride (SF6) for use in electrical equipment.
3.1.31 IEC 60787 – Application guide for the selection of high-voltage current-limiting fuses for transformer circuit applications.
3.1.32 BS 7215 – Separable insulated cable connector system above 1 kV and up to 36 kV.
3.1.33 EN 50181 – Plug-in type bushings above 1 kV up to 36 kV and from 250 A to 1,25 kA, for equipment other than liquid filled transformers.
3.1.34 NRS 087 – Guidelines for the management of SF6 (sulfur hexafluoride) for use in electrical equipment.
3.1.35 NRS 099 – Bulk metering units for medium-voltage systems with rated AC voltages up to and including 24 kV.

3.2 Note that the national equivalent of IEC standards is generally the same but may include specific variations to be taken into account. Information on currently valid national and international standards can be obtained from the South African Bureau of Standards.

3.3 Reference to a particular standard or recommendation in this specification does not relieve the manufacturer of the necessity of the work complying with other relevant standards or recommendations.

3.4 Tenderers offering equipment to standards other than those mentioned above might be considered provided it is clearly indicated in which respect the equipment offered does not comply and the likely consequences of such non-compliance.

4 COMPLIANCE WITH REGULATIONS

4.1 All apparatus and materials supplied shall comply with the current requirements of the Republic of South Africa's Occupational Health and Safety Act, Act 85 of 1993 as amended, and the Regulations issued thereunder, and any regulations issued in modification or substitution thereof. In addition, they shall comply with any other requirements having the force of law to which the Municipality is subject.

5 QUALITY, DESIGN AND EXECUTION

5.1 All apparatus should comply with this Specification. Any departures from the requirements of this Specification shall be stated in the Tenderer's Covering Letter and in the Schedules and may be accepted at the Engineer's discretion.

5.2 No departure shall be made without the prior approval of the Engineer.

5.3 The equipment shall comply with the particulars and guarantees stated in the Schedules.

5.4 The ring main unit, extensible switchgear and bulk metering unit's manufacturer(s) shall have proven and acceptable experience in the manufacture of equipment of the type offered and shall have a service record thoroughly demonstrating the reliability and quality of the equipment offered. The equipment offered shall comprise the Manufacturer's standard equipment. Only proven design and construction methods and principles will be acceptable.

5.5 The Manufacturer's quality assurance system shall be approved in terms of SANS 9001 or an alternative quality assurance system to the approval of the Engineer. A copy of the registration certificate applicable for each item of specification shall be submitted with the tender. Alternative quality assurance systems may be considered but shall be with the approval of the Engineer.

5.6 All materials used shall be new materials and of the best quality. The material of which each part is made shall be one of those recognized as suitable for the purpose in conservative modern practice and of a class suitable for working under the conditions specified. The variations of temperature and atmospheric conditions arising under working conditions shall not cause distortion, deterioration or the setting up of undue stresses in any part nor affect the strength

and suitability of the various parts for the work which they must perform. No welding, filling or plugging of defective parts will be permitted without the sanction in writing of the Engineer.

5.7 Only materials with minimum temperature ratings, in air, in accordance with SANS 62271-1 shall be acceptable and all such materials shall be non-combustible.

5.8 The design and execution of the Work shall incorporate every practicable precaution and provision for: -

5.8.1 The safety of those who will operate and maintain the equipment.

5.8.2 The satisfactory operation of the equipment under all conditions liable to be met in service, and

5.8.3 To facilitate inspection, maintenance and repairs.

5.9 Features likely to require excessive maintenance shall be carefully avoided.

5.10 Kiosks, cubicles and similar enclosed compartments shall be adequately ventilated to restrict condensation but shall at the same time be vermin proof.

5.11 Tenderers shall offer equipment of the highest possible quality to ensure highly reliable service and only proven designs will be accepted.

6 GENERAL

6.1 Service Conditions

6.1.1 The equipment will be connected to a 50 Hz, three-phase system having a maximum fault level of 20 kA and a nominal voltage of 11kV.

6.1.2 Ring main units and bulk metering units for outdoor installation shall be suitable for outdoor all- weather use at sea-level and furthermore be suitable for installation in areas having Heavy, Type B (Coastal) pollution in accordance with SANS 60815-1 due to close proximity to the sea and exposure to strong onshore winds.

6.1.3 Ring main units and extensible switchgear for indoor installation shall be suitable for installation in areas having Heavy, Type B (Coastal) pollution in accordance with SANS 60815-1 due to substation switch-room locations in close proximity to the sea and with exposure to strong onshore winds.

6.1.4 The highest ambient temperature commonly experienced is 40ºC and the lowest -5ºC. Relative humidity varies between 20% and 90%.

6.2 Installation Conditions

6.2.1 Ring main units and bulk metering units for outdoor installation will be installed on an outdoor concrete plinth with suitable cut-outs for cable entry.

6.2.2 Ring main units and extensible switchgear for indoor installation will be installed within brick-built substation rooms.

7 RING MAIN UNIT, EXTENSIBLE SWITCHGEAR AND BULK METERING UNIT DESIGN

7.1 Configuration

7.1.1 The ring main units shall comprise a combination of non-automatic ring main switch disconnector, switch-fuse combination and/or circuit breaker modules, as specified, connected in series by a common busbar.

7.1.2 The ring main units shall be single tank, non-extensible units.

7.1.3 The extensible switchgear shall comprise single module or multiple module extensible non- automatic ring main switch disconnector, switch-fuse combination, circuit breaker and metering modules, as specified, designed for assembly into switchboards through interconnection with insulated and screened busbar couplings or external busbars. The extensible switchgear items shall be of a single make and product range, and tenderers shall tender for all switchgear modules specified (Refer to 2.3.10.4.4 of Conditions of Tender with respect to evaluation and award of dual switch-disconnector modules).

7.1.4 The outdoor bulk metering units (BMU) shall comprise a combination of non-automatic ring main switch disconnector,

switch-fuse combination (where applicable) and circuit breaker modules connected in series by a common busbar and fitted with metering current transformers and voltage transformers and an LV metering compartment, as specified.

7.1.5 The outdoor BMUs shall be non-extensible.

7.1.6 The ring main units, extensible switchgear and BMUs shall be type tested and supplied complete with any weatherproof kiosks, pedestals and / or raising bases necessary to comply with the requirements of this specification.

7.2 Ratings

7.2.1 The ring main units, extensible switchgear and BMUs shall comply with the ratings specified in the Schedules.

7.3 Internal Arc Classification

7.3.1 Ring main units and BMUs for outdoor installation shall have a minimum internal arc classification as specified in the Schedules, and in accordance with the requirements of SANS 62271-202. This rating shall apply to the complete ring main unit or BMU including cable termination enclosures and the weatherproof kiosk, as installed.

7.3.2 Ring main units and extensible switchgear, including metering modules, for indoor installation shall have a minimum internal arc classification as specified in the Schedules, and in accordance with the requirements of SANS 62271-200. This rating shall apply to the complete ring main unit or assembled extensible switchgear switchboard including cable termination enclosures and any necessary pedestals or raising bases, as installed.

7.3.3 Tenderers shall provide detailed information with their tenders covering the installation requirements necessary to ensure compliance with the IAC rating of the ring main units, extensible switchgear and BMUs. This shall include the following:

7.3.3.1 Details of any specific requirements for the fixing of the ring main unit, extensible switchgear or BMU or its weatherproof kiosk to the floor or plinth.

7.3.3.2 Details of floor trench and trench cover board requirements

and minimum wall and roof clearances for indoor installations.

7.3.3.3 Details of any restrictions or prohibited access zones necessary in the vicinity of the ring main unit, extensible switchgear or BMU for indoor and outdoor installations.

7.4 General Requirements

7.4.1 Design and Construction of Switchgear

7.4.1.1 The ring main units and extensible switchgear shall comply with the requirements of SANS 1874 and SANS 62271-200 and shall be of fixed pattern design.

7.4.1.2 The outdoor BMU shall comply with the requirements of SANS 1874, SANS 62271-200 and NRS 099 and shall be of fixed pattern design.

7.4.1.3 All primary components of the equipment shall be made and assembled by the same Manufacturer.

7.4.1.4 Only units with proven service history shall be considered.

7.4.1.5 All switching devices shall be operable from the front of the unit.

7.4.1.6 The ring main units, extensible switchgear and outdoor BMUs shall be provided with lifting eyes with a minimum diameter of 30 mm for lifting or slinging.

7.4.2 Switchgear Dimensions

7.4.2.1 All switchgear units offered for outdoor installation, when assembled in their weatherproof kiosks, shall be fully compatible with the requirements for kiosk dimensions and plinth and base frame layouts detailed in the latest SANS 1874 specification.

7.4.3 Insulating/Interrupting Medium

7.4.3.1 The ring main units, extensible switchgear and the switchgear of the outdoor BMU shall be SF6 insulated. Air Insulated RMU’s will be accepted

7.4.3.2 Only new SF6 gas complying with the requirements of IEC 60376 shall

be used.

7.4.3.3 The gas-insulated switch compartments of the switchgear shall be factory sealed for life for a minimum maintenance-free lifespan of 30 years.

7.4.3.4 The ring main units, extensible switchgear and outdoor BMUs shall not require routine gas replenishment during normal service.

7.4.3.5 The cartridge fuses on switch-fuse combination modules shall be air insulated.

7.4.3.6 The interrupting medium for the switch disconnectors, switch fuse combination disconnectors and circuit breakers shall be SF6 gas or vacuum and shall be detailed in the Schedules.

7.4.4 Monitoring Facility for Insulating Medium

7.4.4.1 An SF6 gas monitoring gauge shall be provided to indicate safe and unsafe gas pressure and shall be visible from the front panel.

7.4.5 Degree of Protection

7.4.5.1 The degree of protection of the weatherproof kiosk for ring main units for outdoor installations and for outdoor BMUs shall be a minimum of IP 44, in accordance with SANS 60529.

7.4.5.2 The degree of protection of all accessible enclosures and compartments of the ring main units, extensible switchgear and outdoor BMUs (within the weatherproof kiosk) shall be a minimum of IP 4X, in accordance with SANS 60529, applicable when all doors are closed.

7.4.6 Accessibility of Compartments

7.4.6.1 The ring main unit, extensible switchgear and outdoor BMUs gas-insulated switch compartment shall be a non-accessible compartment in accordance with SANS 62271-200.

7.4.6.2 The ring main unit, extensible switchgear and outdoor BMUs air-insulated fuse compartment, where applicable, shall be an interlock-controlled accessible compartment in accordance with SANS 62271-200.

7.4.6.3 The extensible switchgear air-insulated metering module shall be an interlock-controlled accessible compartment in accordance with SANS 62271-200.

7.4.6.4 The outdoor BMU air-insulated metering module shall be an interlock-controlled or tool-based accessible compartment in accordance with SANS 62271-200.

7.4.6.5 The ring main unit, extensible switchgear and outdoor BMUs cable termination boxes shall be interlock-controlled accessible compartments in accordance with SANS 62271-200.

7.4.6.6 The ring main unit, extensible switchgear and outdoor BMUs cable test facility compartments, where applicable, shall be interlock-controlled accessible compartments in accordance with SANS 62271-200.

7.4.7 Partition Class

7.4.7.1 The ring main units, extensible switchgear and outdoor BMUs shall be of Partition Class PM in accordance with SANS 62271-200, with earthed metallic partitions between live compartments.

7.4.8 Service Continuity Category

7.4.8.1 The ring main units, extensible switchgear and outdoor BMUs shall be Loss of Service Continuity (LSC) category LSC1 in accordance with SANS 62271-200.

7.4.9 Cable Test Facilities

7.4.9.1 Integral cable test facilities that do not require access to the cable boxes or removal of the separable connectors of the cable termination shall be provided on the switch disconnector modules for the application of test voltages to the associated circuit of up to 19 kV DC or 13 kV AC to earth.

7.4.9.2 Integral cable test facilities that do not require access to the cable boxes or removal of the separable connectors of the cable termination shall also be provided on the switch-fuse combination modules and circuit breaker modules.

7.4.9.3 The cable test facilities shall be accessible from the front of the ring main unit, extensible switchgear and outdoor BMUs.

Test facilities that cannot be directly accessed by an operator standing in front of the indoor ring main unit or extensible switchgear shall not be acceptable.

7.4.9.4 Top mounted test facilities on indoor ring main units and extensible switchgear shall be directly visible to and operable by an operator standing at ground level in front of the ring main unit or extensible switchgear and shall not require the use of ladders or pedestals.

7.4.9.5 Top mounted test facilities requiring the operator to lean into the outdoor main unit or outdoor BMU arc rated weatherproof cubicle shall not be acceptable.

7.4.9.6 The cable test facilities shall not require the use of any loose test plugs or prods.

7.4.9.7 Cable test facilities that require the removal of the cable earth connections shall comply with the requirements for Cable Earthing Facilities below.

7.4.9.8 Access to cable test facilities shall be interlock-controlled to ensure that the test facilities shall only be accessible when the associated earth switch is in the EARTH position, and the cable test facility access shall be capable of being padlocked.

7.4.9.9 The internal arc classification of the ring main unit, extensible switchgear and outdoor BMU pertaining to other live compartments or switch modules shall be maintained while the cable test facilities on any particular switch module are accessed.

7.4.9.10 Phase designations and warning notices shall be permanently marked on test terminals, to approval.

7.4.9.11 Thorough details of the cable test facility design shall be provided with the tender documentation.

7.4.10 <u>Cable Earthing Facilities</u>

7.4.10.1 Each ring main switch disconnector, switch-fuse combination and circuit breaker module shall be fitted with an integral cable earthing switch that complies with the requirements of SANS 62271- 102 and SANS 62271-200.

7.4.10.2 In accordance with SANS 1874, where removable short-circuiting connections are provided for cable earthing (e.g., a removable star point connection) the re-instatement of these connections following cable testing shall not require the use of tools or the application of specific torque settings. This implies that no bolted connections are accepted. It shall not be possible to close the cable test facility if the short-circuiting connections have not been reinstated. It shall not be possible to physically remove the short-circuiting connections from the switchgear.

7.4.10.3 Cable earthing facilities which require the use of loose equipment or attachments shall not be acceptable.

7.4.10.4 Earthing facilities on the switch-fuse combination and circuit breaker modules shall earth both sides.

7.4.11 Cable Live Indication

7.4.11.1 A three-phase voltage detection system (VDS) suitable for the detection and indication of presence and absence of operating voltage and complying with the requirements of SANS 61243-5 shall be provided on each switching devices on the ring main units, extensible switchgear and outdoor BMUs.

7.4.11.2 The VDS system shall provide permanent VDS indication and shall provide for electrical phasing between modules on the ring main units, extensible switchgear and outdoor BMUs using universal phase comparators (UPCs).

7.4.11.3 All capacitive dividers utilized for live circuit indication shall have been type tested, shall have proven in-service performance history in harsh coastal environments, and shall be individually tested for partial discharge in accordance with the requirements of SANS 60270.

7.4.12 Mechanism Locking Facilities

7.4.12.1 Each ring main switch disconnector, switch-fuse combination and circuit breaker shall be capable of being padlocked in the ON position, the OFF position and the EARTH position in accordance with SANS 1874.

7.4.12.2 Each push button for operation of the ring main unit, extensible switchgear and outdoor BMU (e.g., Trip / close push buttons on switch-fuse combination and circuit breaker

modules) shall be fitted with a pad lockable metal cover to prevent unauthorized operation.

7.4.12.3 The operating control locking facilities shall be designed to be locked with mini-padlocks with 5 mm shackles.

7.4.13 General Interlocks

7.4.13.1 Positive mechanical interlocking shall be provided on the ring main unit, extensible switchgear and BMU operating mechanisms in accordance with SANS 1874.

7.4.14 Specialized Tools and Equipment

7.4.14.1 Specialized tools necessary for the routine operation of the ring main units, extensible switchgear and bulk metering units offered, including but not limited to operating and spring charge handles, shall be included within the tendered price per item and shall be supplied by the Contractor and securely housed within the housing of each ring main unit, extensible switchgear and bulk metering unit item.

7.4.14.2 Additional specialized tools recommended by the Tenderer shall be individually itemized and priced in the Pricing Schedule.

7.4.15 RMU Rating Plate

7.4.15.1 The ring main units, extensible switchgear and BMUs shall be fitted with ~~a~~ rating plates complying with the requirements of SANS 1874.

7.4.16 Marking and Labelling

7.4.16.1 The ring main units, extensible switchgear and BMUs shall have markings and labelling as specified in SANS 1874.

7.4.16.2 Single line operating diagrams shall be clearly marked on the front panel of the units.

7.4.16.3 All apparatus and interlocks shall be clearly labelled indicating their purpose, function and operating procedure.

7.4.16.4 All main circuit bushings and test contacts shall be legibly and

indelibly marked with the appropriate phase designation assigned to that terminal. The markings shall be one of L1, L2 or L3, as appropriate.

7.4.16.5 The material, method of printing and method of fixing of all labels shall be to the approval of the Engineer. Mechanical methods of fixing are preferred. Rivetted labels shall utilize blind rivets, not standard pop-rivets with a center hole.

7.4.16.6 Paper stick-on labels shall not be acceptable.

7.4.16.7 Circuit label material provided for the units shall be of the sandwich board type with black lettering on a white background. The labels shall be left blank for engraving by the Employer.

7.4.16.8 The total mass of the unit (in kilograms) shall be marked on its side or rear. In the case of ring main units for outdoor installation the total mass of the ring main unit and kiosk assembly shall be stenciled on the side of the kiosk in white lettering with a minimum font size of 50 mm (e.g. “TOTAL MASS: 500 kg”).

7.4.16.9 A metallic corrosion-resistant 150 mm x 150 mm Type WW7 warning sign in accordance with SANS 1186 shall be permanently attached to the outside of the weatherproof kiosk doors and also each cable termination compartment cover or door. If pop-rivets are used, only stainless-steel blind pop rivets will be acceptable.

7.4.16.10 Where the ring main unit, extensible switchgear or outdoor BMU supplier is not the manufacturer, the supplier shall provide and affix in an approved position a label detailing the supplier’s name or trade mark.

7.4.17 Earthing

7.4.17.1 The ring main units, extensible switchgear and outdoor BMUs shall be provided with earth connection terminals and tinned copper earth bars complying with the requirements of SANS 1874.

7.4.17.2 The earth connection terminal for each metal enclosure and the main tank shall be suitable for the maximum earth fault current specified and shall be of size M12.

7.4.17.3 Two stainless steel nuts and washers shall be provided on each earth connection terminal.

7.4.17.4 All earth bars shall be bonded together providing electrical continuity. All bonding conductors used to interconnect the separate earth bars shall be copper and have a cross sectional area not less than that of the ring main unit earth bar.

7.4.17.5 A minimum of 4 holes of diameter suitable for an M12 bolt shall be provided in the earth bar for earth connections.

7.4.17.6 Any earth bars external to the cable termination compartments shall be shrouded or covered in an approved manner to remove them from view and inhibit unauthorized access so as to minimize the possibility of theft.

7.4.18 Painting and Protection against Corrosion

7.4.18.1 The ring main units, extensible switchgear and BMUs shall be painted and protected against corrosion in accordance with the requirements of SANS 1874.

7.4.18.2 The gas-insulated switch compartment shall be fabricated from stainless steel.

7.4.18.3 All other sheet steel work shall comprise of an approved intrinsically corrosion resistant metal.

7.4.18.4 All external nuts and bolts shall be manufactured from stainless steel. Care shall be taken to ensure that nuts and bolts are not over tightened damaging the threads and preventing nuts and bolts from being loosened and/or retightened.

7.5 Switch Disconnector Modules

7.5.1 Each switch disconnector shall be a three-pole switch that complies with the requirements for general purpose switches of SANS 62271-103.

7.5.2 Switch disconnectors shall be at least Class E2 M1 in accordance with SANS 62271-103.

7.5.3 The operating mechanism of switch disconnectors shall

provide independent manual closing and opening.

7.6 Switch-fuse Combination Modules

7.6.1 General

7.6.1.1 Each switch-fuse combination shall be a three-phase unit that complies with the requirements of SANS 62271-105 and SANS 1874.

7.6.1.2 Where fuse links are housed in a free breathing enclosure there shall be a minimum specific creepage of 25 mm/kV for any creepage paths between live terminals and earthed metal work.

7.6.1.3 The switch-fuse combination shall be capable of supplying a transformer of 1 600 kVA rating.

7.6.2 Fuse Links

7.6.2.1 Fuse links utilized with the ring main units, extensible switchgear and outdoor BMUs shall be 12 kV current-limiting HRC striker pin fuses complying with SANS 60282-1 Type I.

7.6.2.2 Full details of recommended fuse types shall be provided with the tender, including all full technical characteristics and tolerances for striker pin energy class and travel.

7.6.2.3 The fuse links for switch-fuse combination modules shall be DIN type fuses of length 442 mm.

7.6.2.4 The 12 kV HRC fuse links for ring main units and extensible switchgear will be supplied by others.

7.6.2.5 The 12 kV HRC fuse links for compact outdoor BMUs (where applicable) shall be provided by the Contractor and shall be correctly rated for protection of the metering voltage transformers

7.6.3 Operating Mechanism

7.6.3.1 The operating mechanism of the switch-fuse combinations shall provide independent manual closing and stored energy tripping.

7.7 Circuit Breaker Modules

7.7.1 General

7.7.1.1 Circuit breakers shall be three pole devices complying with the requirements of SANS 62271-100 and SANS 1874.

7.7.1.2 Circuit breakers shall be Class C2 E2 M1 in accordance with SANS 62271-100.

7.7.1.3 Circuit breakers for the Recloser Ring Main Unit shall be Class C2 E2 M2 in accordance with SANS 62271-100.

7.7.1.4 The rated operating sequence of the circuit breakers shall be O - t - CO - t - CO where t equals 3 minutes, in accordance with SANS 62271-100.

7.7.1.5 The rated operating sequence of the circuit breakers for the Recloser Ring Main Unit shall be O - t1 - CO – t2 - CO where t1 equals 0.3 seconds and t2 equals 3 minutes, in accordance with SANS 62271-100.

7.7.1.6 The first-pole-to-clear factor shall be 1,5 in accordance with SANS 62271-100.

7.7.2 Operation

7.7.2.1 The operating mechanism of the circuit breakers shall provide independent manual closing and stored energy tripping.

7.7.2.2 Circuit breakers shall have a trip-free mechanical switching mechanism.

7.7.3 Protection

7.7.3.1 Each circuit breaker module, except in the case of Recloser RMUs and Outdoor SSEG BMUs, shall be fitted with a self-powered protective relay, installed and wired complete for service, as specified below.

7.7.3.2 Each circuit breaker module shall be fitted with ring-core current transformers as specified.

7.7.3.3 Full details of the protective relay and current transformers shall be provided with the tender

7.7.4 Protective Relays for Recloser RMUs and Outdoor SSEG BMUs

7.7.4.1 Protective Relays for Recloser RMUs and Outdoor SSEG BMUs will be provided and installed by the Employer. Such relays will be auxiliary powered IEDs.

7.7.4.2 Facilities shall be provided in these particular RMU types for the housing of such IED relays, positioned such that the relay is flush mounted (i.e., Relay fascia substantively aligned with RMU fascia, and the body of the relay recessed behind the RMU fascia).

7.7.4.3 IED Relays shall be housed in the LV / Mechanism compartment of the RMU circuit breaker module or in a dedicated RMU top unit forming an integral part of the ring main unit or BMU switchgear.

7.7.4.4 IED Relays shall be so positioned that they are clearly visible and accessible to Operators.

7.7.4.5 Provision shall be for IED relays of minimum dimensions as detailed in the Technical Schedules.

7.7.4.6 The RMU fascia shall have a relay cutout of the dimensions specified in the Schedules and shall be of appropriate mechanical strength and rigidity for housing and securing of the IED relay.

7.7.5 Self-Powered Protective Relays

7.7.5.1 Protective Relays for all circuit breaker modules other than those in Recloser RMUs and Outdoor SSEG BMUs shall be self-powered protective relays as specified below.

7.7.5.2 The self-powered protective relays shall be suitable for use with standard SANS (/IEC) 61869-2 protective current transformers. Self-powered protective relays requiring customized, dedicated CTs will not be accepted.

7.7.5.3 The self-powered protective relays shall provide both over-current and earth fault functions with definite time, normal inverse time, very inverse time and extremely inverse time protection characteristics in accordance with IEC 60255-151.

7.7.5.4 Protective relays shall preferably be housed within the standard fascia of the LV / mechanism compartment of the ring main units, extensible switchgear or BMU switchgear.

7.7.5.5 Protective relays requiring a separate relay compartment shall be to the approval of the Engineer. Such arrangements will in general be acceptable provided that the separate relay compartment is a top mounted compartment forming an integral part of the ring main unit, extensible switchgear or BMU switchgear, that this compartment fits within the standard envelope of the outdoor RMU or BMU weatherproof cubicle, and that for both indoor and outdoor switchgear the relay can be viewed and operated directly by an operator standing at ground level in front of the switchgear without requiring the use of ladders or pedestals.

7.7.5.6 The protective relay installation on the ring main unit, extensible switchgear or BMU fascia shall have a minimum IP

rating of IP54 and shall be fully protected against the effects of rain during switching operations on outdoor units. Relays that do not have a minimum intrinsic IP54 rating shall be provided with a gasketed removable transparent cover and / or housing and any other measures necessary to raise the IP rating as specified and provide appropriate weather protection.

7.7.5.7 Protective relays shall be fitted with clearly visible indicators identifying when a relay-initiated circuit breaker trip has commenced timing or has occurred and identifying the specific cause of the trip. The relay shall provide separate protection operation indication for each phase and for earth faults.

7.7.5.8 Protection operation indicators shall continue to indicate after closing of the trip contacts and shall be manually resettable without the need to re-energize the ring main unit on load.

7.7.5.9 Protective relays shall be fitted with an HMI for fault indication and shall have battery back-up to maintain indication and functionality while the ring main unit is without CT power, de-energized or the circuit breaker open, for a minimum period of 72 hours.

7.7.5.10 The HMI shall provide a digital display with a detailed event recording and fault history buffer. This shall record a minimum of two fault events or disturbances.

7.7.5.11 The relay shall provide load current indication per phase.

7.7.5.12 Protective relay back-up batteries shall be maintenance free, shall have a minimum service life of 10 years, shall be easily replaceable by the user, and shall be of a standard commercially available type. Proprietary battery types unique to the relay type or manufacturer shall not be acceptable.

7.7.5.13 The overcurrent pick-up setting range for relays shall be selectable from 20% to a minimum of 140% of the nominal relay rating in steps of not greater than 2.5%.

7.7.5.14 The earth fault pick-up setting range for relays shall be selectable from 10% to a minimum of 100% of the nominal relay rating in steps of not greater than 2.5%.

7.7.5.15 The protective relay IDMTL overcurrent and earth fault characteristics shall have a minimum time multiplier setting of

0.05 or better and steps of 0.01 or better.

7.7.5.16 The protective relay Definite Time overcurrent and earth fault characteristics shall have time delay settings selectable from 0.04 s to at least 1 s in steps of 0.05 s or better.

7.7.5.17 The Tenderer shall declare in the Schedules the minimum primary current (percentage of CT full load rating) for full relay functionality, the relay “wake-up” time when the circuit breaker is closed onto a fault, and the total fault clearing time from initiation of fault both for circuits on-load (with relay “awake”) and for circuits closed onto a fault, for the circuit breaker modules tendered. Acceptance of relays with high minimum operating currents and slow “wake-up” times in comparison with norms for similar equipment and the Employer’s distribution system requirements shall be at the discretion of the Engineer.

7.7.5.18 The Tenderer shall provide rates in the price schedule for the supply and delivery of spare self- powered protective relays and spare trip coils, each of the type specified and offered with their tender, for use as and when required as maintenance replacements on equipment in service.

7.7.6 Protective Current Transformers

7.7.6.1 Protective current transformers shall be standard CTs complying with the requirements of SANS 61869-2.

7.7.6.2 Protective current transformers shall be of generic applicability and shall not be customized to solely the self-powered protective relay offered.

7.7.6.3 Current transformers shall comply with the ratings specified in the Schedules.

7.7.6.4 Ring-core CTs shall be either fitted over the Type C cable bushing or shall be mounted within the cable compartment and positioned as specified below for cable termination enclosures.

7.7.6.5 The Tenderer shall provide rates in the price schedule for the supply and delivery of spare single core protection CTs of the type specified and offered, for use as and when required as maintenance replacements on equipment in service.

7.7.7 Protection Wiring and Testing Facilities

7.7.7.1 All wiring to the protective relay (e.g. from CTs) shall be terminated onto a terminal block situated in the circuit breaker module, or the separate relay compartment if approved accordingly by the Engineer.

7.7.7.2 The terminal block shall be easily accessible from the front of the ring main unit, extensible switchgear or outdoor BMU without the need to operate the circuit breaker module in order to gain access.

7.7.7.3 The protective relay shall be provided with a dry (potential-free) trip output contact for relay testing purposes which shall be wired to the terminal block.

7.7.8 SCADA Requirements – General (Shall be specified in the BOQ)

7.7.8.1 The Recloser RMUs and Outdoor SSEG BMUs shall be fully SCADA ready, fitted as detailed hereunder. Specific details specified in this regard apply solely to these two equipment types.

7.7.8.2 It is the intention that the IED relay, the Remote Terminal Unit, Ethernet Switch, the Radio Communications Unit and the Power Supply Unit and associated DC-DC convertor will be supplied and installed by the Employer.

7.7.8.3 All indications, alarms, controls, motors, trip and close coils, terminal strips, small wiring, fiber conduit, housings, equipment mounting boards, heaters and other parts and accessories necessary to fulfil the specified requirements shall be included in the tender and provided by the contractor.

7.7.9 SCADA Requirements - Housing

7.7.9.1 A SCADA Compartment, as specified, shall be provided on the Recloser RMUs and Outdoor SSEG BMUs, and shall be suitably sized to accommodate the SCADA related devices and facilities specified hereunder, including the Power Supply Unit, Remote Terminal Unit, DC-DC Convertor, Radio Communications Unit, Ethernet Switch, AC Mains and DC Auxiliary terminal strips, and trucking.

7.7.9.2 The SCADA Compartment shall take the form of either a dedicated external compartment mounted on the RMU or BMU weatherproof housing or an internal RMU top unit housing within the weatherproof cubicle and situated above the RMU or BMU.

7.7.9.3 The External SCADA Compartment, if provided, shall be fitted with a removable wooden backing board (20 mm Blockboard or equivalent to approval) which shall be sized and laid out for the SCADA equipment and accessories as detailed in the attached drawing DR 3380 Rev 1. The minimum internal dimensions of the External SCADA Compartment shall be as detailed in the Technical Schedules.

7.7.9.4 The Dedicated RMU Top Units, if provided, shall fit within the standard envelope of the outdoor RMU or BMU weatherproof cubicle and shall be fully covered in terms of the IAC classification and testing of the RMU and housing in accordance with SANS 62271-202.

7.7.9.5 The RMU Top Unit, if utilized as the SCADA Compartment, may also fulfil the IED Relay housing function.

7.7.9.6 The RMU Top Unit shall be suitably sized to house all equipment and accessories specified for the SCADA compartment (and IED Relay, if relevant) utilizing mountings on the fascia (IED Relay), backing boards and compartment floor, as determined by the particular compartment dimensions.

7.7.9.7 Accommodation shall be provided for the various elements of the SCADA requirements in accordance with their dimensional envelopes as detailed in the Technical Schedule.

7.7.9.8 The Remote Terminal Unit, Ethernet Switch, DC-DC Convertor and Radio Communications Unit are designed and suitable for bolted flat mounting on the equipment backing board. The Power Supply Unit is suitable for bolted mounting on the equipment backing board or for floor mounting in the SCADA compartment or RMU Top Unit. The Power Supply battery is to be floor mounted in the SCADA Compartment or RMU Top Unit.

7.7.9.9 All accommodation and layouts in the RMU Top Units are subject to approval by the Engineer. Dimensioned drawings indicating the proposed detailed layout are to be provided with the tender submission.

7.7.9.10 Dimensional requirements for these units are indicated in the Schedules.

7.7.9.11 The SCADA Compartment or RMU Top Units, whichever offered, shall comply with the IP Ratings specified in the Technical Schedules.

7.7.9.12 The External SCADA Compartment, where applicable, shall comply fully with the requirements specified in Section 7.15 of this document for the outdoor BMU LV Metering Compartments with respect to housing, doors and locking facilities.

7.7.9.13 The SCADA compartment shall be provided with an Antenna Conduit as specified for the Radio Communications Unit.

7.7.10 SCADA Requirements – Wiring

7.7.10.1 Small wiring for all controls, alarms, statuses, indications and auxiliary supply for each of the RMU MV modules shall be wired from the motors, actuators, coils, contacts and switches to a terminal strip(s) dedicated to that MV module.

7.7.10.2 The compartment housing the IED relay shall be fitted with terminal strip(s) marshalling all controls, alarms, statuses and indications from each of the RMU MV modules terminal strips detailed above, and all controls, alarms, statuses, indications shall be wired through to these terminal strips.

7.7.10.3 On SSEG BMUs the compartment housing the IED relay shall in addition be fitted with a terminal strip marshalling outputs from the BMU voltage transformers for the purpose of over / under voltage indication.

7.7.10.4 The compartment housing the IED relay shall further be fitted with AC Mains Supply and Auxiliary DC Supply terminal strips.

7.7.10.5 Wiring from the Relay housing terminal strips to the IED Relay will be supplied and installed by the Employer.

7.7.10.6 A dedicated conduit for an IEC 61850 communications fiber shall be provided from the compartment housing the IED Relay to the SCADA compartment. The communications fiber between the IED Relay and SCADA Switch will be provided

and installed by the Employer.

7.7.10.7 The incoming AC Mains Cable shall be provided and installed by the Employer, and for security (anti-vandalism) and IAC reasons must be routed via the cable cut-out in the RMU or BMU concrete plinth.

7.7.10.8 Facilities are to be provided in the RMU or BMU Circuit Breaker Module MV cable compartment for the clamping and terminating of the incoming AC Mains Cable, of maximum size 10mm^2 Cu 2-core PVC SWA PVC. Cable clamps and AC Mains Supply terminal strip shall be positioned on the outside wall of the Circuit Breaker Module MV cable compartment (i.e., Inside, but not on an interior bulkhead between compartments).

7.7.10.9 AC Mains Supply wiring from the terminal strip in the Circuit Breaker Module MV cable compartment to the AC Mains Supply terminal strip in the IED Relay compartment is to be supplied and installed by the contractor. AC Mains Supply wiring is to be of minimum size 4mm^2. Wireways between the MV Cable compartments and the IED Relay compartment shall be grommeted and fully IAC compliant in accordance with the IAC classification and testing.

7.7.10.10 The SCADA compartment housing the Battery and Power Supply unit shall be fitted with AC Mains Supply and Auxiliary DC Supply terminal strips, and AC mains and DC auxiliary supply wiring of minimum size 4mm^2 is to be provided and installed from there to the respective terminal strips in the IED Relay compartment.

7.7.10.11 Secondary wiring from the Protective Current Transformers shall be of minimum size 2.5mm^2 and shall be wired to terminal strips in the IED Relay compartment.

7.7.10.12 Trunking (60mm (w) x 80mm (h) Slotted Trunking) shall be provided by the contractor in the SCADA compartment as detailed in Drawing DR 3380 Rev 1, or in the RMU Top Unit and IED Relay compartment as required in order to neatly and effectively route all small wiring.

7.7.10.13 All small wiring shall be fully wired, ferruled and trunked to the relevant sources / destinations. These shall include AC Mains and Auxiliary DC Supply wiring to the SCADA compartment.

7.7.10.14 Detailed wiring schematic diagrams and wire numbering and ferruling schedules are to be provided by the contractor during the engineering approval period after contract award and shall be to the Engineer's approval.

7.7.11 SCADA Requirements – Controls, Indications and Alarms

7.7.11.1 The Recloser RMUs and Outdoor SSEG BMUs units shall be equipped with controls as follows:

a. Switch-disconnector motorized Open & Close.
b. Switch-fuse combination disconnector motorized Open & Close.
c. Circuit-breaker motorized spring charge, Open & Close.

7.7.11.2 The Recloser RMUs and Outdoor SSEG BMUs units shall be equipped with status indication as follows (in addition to the standard fitment specified within this document):

7.7.11.2.1 Switch-disconnector module: motorized operation, auxiliary switches for:

a. disconnector position (2x NO, 2x NC).
b. earthing switch position (2x NO, 2x NC).

7.7.11.2.2 Switch-fuse disconnector module: motorized operation, auxiliary switches for:

a. disconnector position (2x NO, 2x NC).
b. earthing switch position (2x NO, 2x NC).
c. fuse blown.

7.7.11.2.3 Circuit breaker module: motorized spring charge, trip and close trip coils, auxiliary switches for:

a. circuit breaker position (2x NO, 2x NC).
b. disconnector position (2x NO, 2x NC).
c. earthing switch position (2x NO, 2x NC).
d. circuit breaker tripped.

7.7.11.2.4 Local / Supervisory Selector auxiliary switches for:

a. Selector position.

7.7.11.3 The Outdoor SSEG BMUs units shall be provided with VT outputs as follows:

a. VT output per phase for purpose of over / under voltage detection.

7.7.11.4 The Recloser RMUs and Outdoor SSEG BMUs units shall be equipped with alarms as follows:

a. Low SF6 gas density.
b. Door open.

c. “Close not healthy”, for switch-disconnectors.
d. “Close not healthy”, for switch-fuse combinations.
e. “Circuit-breaker not healthy”, for circuit breakers.
f. “Stored energy mechanism not charged”, for all modules.

7.7.11.5 All motors for motorized spring charge and operation shall be AC powered at 230V 50Hz and shall be provided with interposing relays.

7.7.11.6 The Recloser RMUs and Outdoor SSEG BMUs shall be fitted with a padlock able Local / Supervisory selector, which when selected to the Local position shall disable all remote operation.

7.7.11.7 The Local / Supervisory selector shall be situated on the RMU or BMU front fascia in a position fully visible and accessible to the operator and shall be wired to the IED Relay terminal strip.

7.7.11.8 The RMU gas pressure sensor shall be provided with low gas pressure auxiliary contacts and wired to the IED Relay compartment terminal strip for alarm purposes.

7.7.12 Auxiliary Supply

7.7.12.1 Recloser RMUs and Outdoor SSEG BMUs will be fitted with an auxiliary Power Supply Unit for SCADA and control purposes.

7.7.12.2 The Power Supply Unit is to be supplied and installed by the Employer. Suitable accommodation is to be provided by the Contractor as specified.

7.7.12.3 The Power Supply Unit will be rated to suit RTU and other SCADA hardware requirements but will be provided with a 24V DC-DC convertor that will be utilized to provide auxiliary DC Supply for the RMU.

7.7.12.4 Spring charge and switch-disconnector motors shall be rated for 230V 50Hz AC supply.

7.7.12.5 RMU Trip and Close Coils and all other RMU auxiliaries shall be rated for 24V DC auxiliary supply. The tenderer shall provide details of load ratings for each item in the Technical Schedules.

7.7.13 Anti-Condensation Heaters

7.7.13.1 Recloser RMUs and Outdoor SSEG BMUs shall be fitted with suitably rated 230 V AC anti- condensation panel heaters in the IED Relay compartment, SCADA Compartment and / or RMU Top Unit, as applicable, as required to stabilize temperatures and prevent condensation build-up.

7.7.13.2 Heater ratings shall be chosen with attention given to the compartment volumes and ventilation and shall be appropriate to maintaining a stable ambient temperature.

7.8 Extensible Switchgear Metering Modules

7.8.1 General

7.8.1.1 The metering module shall comprise an air insulated metering cubicle fitted with busbars, busbar extension bushings, metering current transformers, metering voltage transformers, fuses and LV equipment as specified, and designed for assembly into an MV extensible switchgear switchboard.

7.8.1.2 The metering module shall be rated as specified for the extensible switchgear modules.

7.8.1.3 The metering module shall be fitted with an LV compartment equipped with terminal blocks, test blocks, LV fuses and links, phase indicators and other fittings as specified, and shall have provision for fitment of meters.

7.8.1.4 The metering module metering compartment door shall be fitted with approved interlocks to prevent the opening of the door while the compartment is live.

7.8.1.5 The metering compartment shall be designed to facilitate the easy removal and replacement of one or more of the CTs or VTs without the need to remove adjacent CTs or VTs. The replacement of a CT or VT shall not require adjacent chambers of the same panel to be disturbed.

7.8.1.6 Meters will be supplied and mounted by others, either in the LV compartment or in a separate remote cubicle, as required.

7.9 Outdoor Bulk Metering Units

7.9.1 Standard Outdoor BMU

7.9.1.1 The standard outdoor BMU shall comprise a factory assembled and tested free-standing unit complying with the requirements of NRS 099 and comprising the following:

7.9.1.1.1 A ring main unit compartment.
7.9.1.1.2 An MV metering compartment.
7.9.1.1.3 An MV customer compartment.
7.9.1.1.4 A weatherproof enclosure.

7.9.1.1.5 An LV metering compartment.

7.9.1.2 A single tank non-extensible three-way ring main unit comprising two ring main switch-disconnector modules and a circuit breaker module shall be housed in the ring main unit compartment.

7.9.1.3 Metering current transformers and metering voltage transformers shall be housed in the MV metering compartment.

7.9.1.4 A single extensible switch-disconnector module shall be housed in the MV customer compartment for the customer connection, with extensible busbar bushings on the MV metering compartment side.

7.9.2 Compact Outdoor BMU (Alternative)

7.9.2.1 The compact outdoor BMU shall comprise a factory assembled and tested free-standing unit complying with the requirements of NRS 099 but without the separate MV metering compartment envisaged in terms of NRS 099, and comprising the following:

7.9.2.1.1 A single tank, non-extensible, four-way (or a five-way, where specified) ring main unit.
7.9.2.1.2 Metering current transformers and metering voltage transformers accommodated within the compact outdoor BMU.
7.9.2.1.3 A weatherproof enclosure.
7.9.2.1.4 An LV metering compartment.

7.9.2.2 The four-way ring main unit shall comprise a single tank, non-extensible ring main unit with two switch-disconnector modules, one switch-fuse combination module and a customer connection circuit breaker module.

7.9.2.3 The five-way ring main unit (where specified) shall comprise a single tank, non-extensible ring main unit with two switch-disconnector modules, one switch-fuse combination module and two customer connection circuit breaker modules.

7.9.2.4 Metering current transformers shall be accommodated within the circuit breaker module(s) cable termination enclosure(s).

7.9.2.5 Metering voltage transformers shall be accommodated within

the compact outdoor BMU to the satisfaction of the engineer and shall be connected to the ring main unit busbars via the switch-fuse combination module.

7.9.2.6 The positioning of the metering voltage transformers within the compact BMU shall not in any way detract from the specified and tested internal arc classification or dielectric performance of the equipment.

7.9.3 Outdoor SSEG BMU

7.9.3.1 The outdoor SSEG BMU shall comprise a compact outdoor bulk metering unit as specified above, with a single outgoing customer connection, and in addition fitted with a SCADA compartment and associated equipment and fittings as specified in Section 7.7.10 above (SCADA Requirements), and Section 7.15 below in the case of external SCADA Compartment.

7.9.4 General BMU Requirements

7.9.4.1 The outdoor bulk metering units offered shall be either standard outdoor BMUs or compact outdoor BMUs as specified in terms of this specification.

7.9.4.2 The steel base of the standard and compact outdoor BMUs shall be of sufficiently rigid construction to allow the assembled BMU to be lifted without deformation or damage and shall not have removable front sections for MV cable installation.

7.9.4.3 The outdoor BMU enclosure shall comply with the requirements of this specification for weatherproof kiosks.

7.9.4.4 Outdoor BMUs with a single customer circuit breaker or switch-disconnector module shall be for single feeder MV customer connections.

7.9.4.5 Outdoor BMUs with two customer circuit breaker modules shall be for dual feeder MV customer connections to a single customer.

7.9.4.6 Meters will be supplied and mounted by others.

7.9.5 BMU Internal MV Interconnections and Terminations

7.9.5.1 Internal MV connections on the standard outdoor BMU shall comply with the requirements of NRS 099.

7.9.5.2 Internal MV connections on the alternative compact outdoor BMU, between the switch-fuse combination module and the voltage transformers, shall be unarmored, screened, XLPE insulated, single core, copper conductor 11 kV trailing cables complying with SANS 1339 and fitted with screened separable connectors on both ends. The trailing cables screen shall be earthed on the switch-fuse combination module side only.

7.10 Busbars

7.10.1 General

7.10.1.1 The busbars for ring main units shall be entirely incorporated within the gas-insulated switch compartment and shall be non-extensible.

7.10.1.2 The busbars for single and dual module extensible switchgear shall be extensible at both sides of the module.

7.10.1.3 Busbar extension shall be achieved through the use of busbar coupling inserts, or through the use of external busbars.

7.10.1.4 Busbar connections, whether by busbar couplings or external busbars, shall be fully sealed to preclude ingress of moisture and shall be maintenance free for the service life of the switchgear.

7.10.1.5 Full design and installation details for the busbar connections shall be provided with the tender documentation.

7.10.2 Busbar Couplings

7.10.2.1 Busbar couplings shall be fully insulated, screened and stress controlled.

7.10.2.2 Busbar couplings shall be designed and tested to provide a tight dielectric seal and to fully preclude the possibility of air voids and partial discharges once assembled.

7.10.2.3 The design provisions for the switch-panel assembly shall ensure that the variations in distance and alignment between adjacent panels are constrained by means of bolted mechanical spacers to within the busbar coupling design tolerances. The busbar couplings shall be suitable for user installation.

7.10.3 Busbar Blanking Plugs

7.10.3.1 Busbar blanking plugs and metal blanking cover plates shall be provided for sealing busbars at the switchboard end.

7.10.3.2 Busbar blanking plugs shall be fully insulated, screened and stress controlled.

7.10.3.3 Busbar blanking plugs shall be designed and tested to provide a tight dielectric seal and to fully preclude the possibility of air voids and partial discharges once assembled.

7.10.3.4 Busbar blanking plugs shall preclude ingress of moisture and shall be maintenance free for the service life of the switchgear.

7.10.4 External Busbars

7.10.4.1 External busbars shall be fully insulated, screened and stress controlled.

7.10.4.2 Bushings on extensible switchgear for connection to external busbars shall be Type C bushings complying fully with the requirements of this specification for MV cable bushings.

7.10.4.3 External busbars shall be provided with blanking plugs / dead end caps for sealing the busbars at the switchboard end. Such blanking plugs / dead end caps shall be firmly and securely fitted in place and shall comply with the specific requirements for busbar blanking plugs stated above.

7.10.4.4 The extensible switchgear shall be provided with protective covers to shroud the external busbars on all sides.

7.10.4.5 The design provisions for the switch-panel assembly shall ensure that the variations in distance and alignment between

adjacent panels are constrained by means of bolted mechanical spacers to within the external busbar design tolerances. The external busbars shall be suitable for user installation.

7.11 Cable Termination Enclosures, Terminations and Bushings

7.11.1 Cable Termination Enclosures and Terminations

7.11.1.1 Cable termination enclosures shall be air-filled enclosures complying with SANS 876 in all respects.

7.11.1.2 The cable termination enclosures shall be suitable for termination of three core impregnated paper insulated 11 kV cables of up to 185 mm^2 with dry type cable terminations complying with NRS 053 (95 kV BIL). All 11 kV cables will be provided, installed and terminated by others.

7.11.1.3 The cable termination enclosures shall be suitable for Type 2 shrouded and Type 3 unscreened separable connector terminations.

7.11.1.4 Cable termination enclosures with cable bushings at staggered heights will not be accepted.

7.11.1.5 The height of the cable termination enclosures for switch disconnector and switch-fuse combination modules shall be a minimum of 650 mm, measured from the center line of the cable bushings to the gland plate or cable support clamp.

7.11.1.6 Where ring-core current transformers are required for the circuit breaker modules, the height of the cable termination enclosures shall be a minimum of 800 mm, measured from the center line of the cable bushings to the gland plate or cable support clamp.

7.11.1.7 Where ring-core current transformers are required for protection and metering for the circuit breaker modules of compact outdoor BMUs, the height of the cable termination enclosures shall be a minimum of 800 mm, measured from the center line of the cable bushings to the gland plate or cable support clamp.

7.11.1.8 The current transformers for the circuit breaker modules of compact outdoor BMUs shall either be dual-core protection

and metering ring-core current transformers or shall be separate ring-core current transformers with one of the current transformers being mounted on the Type C cable bushing.

7.11.1.9 Separate protection and metering ring-core current transformers (per phase) for the compact outdoor BMUs that are mounted adjacent to each other in the cable termination enclosure for fitting over the cable tails shall not be acceptable.

7.11.1.10 It shall be ensured by the Tenderer that the cable termination enclosure is of sufficient height to terminate the specified three core impregnated paper insulated 11 kV cables safely and to provide sufficient space for cable core crossings below the current transformers, even if this entails providing a cable termination enclosure of greater than the specified minimum height.

7.11.1.11 Cable termination enclosures shall be designed to allow the easy removal of the current transformers while the cable termination is in progress and the easy refitment of the current transformers when the completed cable termination is being mounted in place within the enclosure.

7.11.1.12 The current transformers shall be mounted such that they are positioned over the screened portion of the three cores 11 kV PILC cable termination but provide sufficient clearance for core crossings below the current transformers.

7.11.1.13 The cable termination enclosures shall be fitted with internal arc rated removable covers in accordance with the internal arc classification of the ring main unit.

7.11.1.14 Any breathing and/or drain vents in the cable termination enclosures necessary to prevent condensation or to facilitate draining shall be suitably vermin proofed.

7.11.2 <u>Cable Clamping and Gland Plate</u>

7.11.2.1 Each cable termination enclosure shall be provided with a cable support clamp suitable for clamping of 35 mm^2 - 185 mm^2 PILC DSTA cable.

7.11.2.2 The cable clamp shall be positioned in the cable termination enclosure or in the pedestal or raising base, as required in

order to comply with the specified height and shall be so designed that the cable is firmly secured but that no stress due to bending is placed on the cable when terminated. Any other arrangements for securing of the cables shall be subject to the Engineer's approval.

7.11.2.3 The cable termination enclosure or the pedestal or raising base (where present) on ring main units and extensible switchgear for indoor installation shall be provided with a steel gland plate in accordance with the requirements of SANS 1874 which shall be designed and tested to withstand the pressure rise associated with an internal arc fault and to cause the arc energy to be directed through the pressure relief facilities provided. Such gland plate shall prevent the purging of overpressure and arc flash associated with an arcing fault into the cable trench.

7.11.2.4 The gland plate shall be suitable for assembly around the cable after making-off of the cable termination and shall not require disassembly or removal of the front side of the cable termination compartment or raising base. The gland plate shall be provided with a rubber grommet to ensure a tight seal between the gland plate and cable.

7.11.2.5 Alternative gland plate and cable seal designs shall be to the Engineer's approval.

7.11.3 Cable Bushings

7.11.3.1 Cable bushings on all modules shall be Type C bushings complying with EN 50181.

7.11.3.2 The bushings shall have an M16 x 2 thread and be suitable for the use of unscreened separable connectors (USCs). The USCs currently in use are the Raychem RICS 5-series and 3-series.

7.11.3.3 The cable bushings shall be orientated in the horizontal axis and suitable for cable terminations using the 90° elbow shaped USCs detailed above, with vertical cable tails.

7.11.3.4 The bushings shall be fitted with M12 stainless steel reducing stems and M12 nut, washer and spring washers.

7.11.3.5 The bushings shall be manufactured and tested in accordance with SANS 60137. In addition to the voltage test

specified in SANS 60137 the bushings shall be partial discharge tested in accordance with the requirements of SANS 60270. The magnitude of the discharge shall not be greater than 5 pC.

7.11.3.6 The surface of the bushings shall be smooth and free from blemishes and patches or fillings.

7.11.3.7 The bushings shall be made from insulating material to the approval of the Engineer. Dough molded compound cable bushings are not acceptable.

7.12 Metering Current Transformers

7.12.1 The indoor metering module and outdoor BMUs shall be fitted with dual ratio metering current transformers for each phase.

7.12.2 The metering CTs shall comply with the requirements of SANS 61869-2 and shall be of extended accuracy class Cl 0.5

7.12.3 Metering CTs shall have an Instrument Security Factor of FS 10 in accordance with SANS 61869- 2.

7.12.4 The metering CTs shall comply with the ratings specified in the Schedules.

7.12.5 As detailed above under “Cable Termination Enclosures and Terminations” the metering CTs on outdoor BMUs shall be either supplied as dual CTs (with the protection CTs) or shall be supplied as bushing mounted CTs mounted on the Type C cable bushings. Separate CTs per phase in the cable termination compartment will not be accepted.

7.12.6 The CTs shall have a rated short-time thermal current (I_{th}) equal to the rated short time withstand rms current for the assembled metering module or metering unit, with a duration of 1 s.

7.12.7 Metering CTs on indoor metering modules and on outdoor BMUs shall be provided with $4mm^2$ CT wiring on the secondary side.

7.12.8 The Tenderer shall provide rates in the price schedule for the

supply and delivery of spare dual- core protection and metering CTs and / or spare single core metering CTs (as applicable to the equipment offered), as specified, for use as and when required as maintenance replacements on equipment in service.

7.13 Metering Voltage Transformers

7.13.1 Voltage transformers shall comply with the requirements of SANS 61869-3.

7.13.2 The VTs for extensible switchgear metering modules and standard outdoor BMUs shall be unscreened, solid-dielectric type VTs.

7.13.3 The VTs for the alternative compact outdoor BMUs shall be fully screened, solid dielectric type
VTs.

7.13.4 The voltage transformers shall be single phase earthed voltage transformers (EVTs) with the primary star point earthed.

7.13.5 The VTs shall comply with the ratings specified in the Schedules.

7.13.6 The VTs shall be discharge free and shall have a minimum voltage factor of 1,2 continuous and 1,9 for 30 s.

7.13.7 The VTs shall have a short circuit withstand capability in accordance with SANS 61869-3.

7.13.8 Particular attention shall be given to ensuring that saturation or undamped ferro-resonant oscillations do not occur during all foreseeable system conditions, and where required to fulfil this requirement tertiary (or residual) windings shall be provided and connected as an open delta winding with suitable protective circuitry. Such circuitry shall also make provision for VT earth fault conditions.

7.13.9 The VTs for extensible switchgear metering modules and standard outdoor BMUs shall be fitted with integral MV HRC fuses that shall be easily accessible when the metering compartment door is open.

7.13.10 The VTs for the alternative compact outdoor BMUs shall not

have integral MV HRC fuses mounted within the voltage transformer but shall be protected by appropriately rated MV HRC fuses in the switch-fuse combination module of the compact outdoor BMU.

7.13.11 The VTs shall be fitted with fuses on the LV side, which shall be housed within the LV metering compartment.

7.13.12 In the event that the voltage transformers offered have an output greater than that specified, they shall have an accuracy class at least equal to that specified over the full output range.

7.14 Indoor MV Metering Module and Outdoor BMU LV Metering Compartments

7.14.1 The extensible switchgear metering modules and outdoor BMUs shall be fitted with a low voltage metering compartment equipped with such terminal blocks, test blocks, LV fuses and links, phase indicators and other fittings.

7.14.2 The LV metering compartment for extensible switchgear metering modules shall be fitted with a flush mounted, hinged door complying with the requirements of Section 8.3 of this specification that is recessed and flush within the surrounding frame and is provided with locking and lock protection facilities as specified.

7.14.3 The LV metering compartment for outdoor BMUs shall be accessible from and secured to the right-hand end of the BMU.

7.14.4 The LV metering compartment for outdoor BMUs shall comply with the requirements specified for weatherproof kiosk doors.

7.14.5 The LV metering compartment for outdoor BMUs shall be ventilated by natural air circulation through the provision of appropriately placed, top and bottom positioned ventilation louvres and appropriate drainage holes so as to prevent internal condensation. Any such ventilation facilities shall be positioned so as to comply with the specified degree of protection.

7.14.6 All breathing and/or venting facilities in the kiosk shall be suitably

vermin proofed.

7.14.7 The LV metering compartment doors for extensible switchgear metering modules and for outdoor BMUs shall have provision for affixing a standard Utility metering compartment seal that must be broken in order to unlock and open the door. Such a facility shall be in addition to the specified padlock requirements.

7.14.8 The LV metering compartment for extensible switchgear metering modules and for single feeder outdoor BMUs shall be fitted with a removable equipment backing board constructed of 20 mm blockboard which shall be of minimum dimensions 550 mm (h) x 300 mm (w).

7.14.9 The LV metering compartment for two feeders (i.e., two circuit breaker) compact outdoor BMUs shall be fitted with a removable equipment backing board constructed of 20 mm blockboard (or equivalent to approval) which shall be of minimum dimensions 550 mm (h) x 600 mm (w).

7.14.10 The backing board shall be fixed with 4 x 8 mm stainless steel bolts, nuts and flat washers.

7.14.11 The LV metering compartments shall have a minimum clear internal depth of 200 mm, measured from the mounting surface of the equipment backing board to the inner edge of the locking mechanism, locking mechanism rods and flanges, hinges or other hardware mounted on the metering compartment doors.

7.14.12 No door mounted hardware shall encroach within this minimum clearance and the LV compartment door mechanism shall not encroach within this minimum clearance during any phase of operation.

7.14.13 The LV metering compartment doors shall be sized so as to allow removal of the equipment backing board without the need to remove the door(s).

7.14.14 The LV metering compartment for extensible switchgear metering modules shall be fitted with suitable facilities for termination of multi-core cabling for connection to a remote metering cubicle, either directly into the LV compartment or into an approved multi-core cable termination box. Cable access to the LV compartment or termination box shall be

from overhead cable tray via a glanded termination. The gland plate shall be suitable for terminating a PVC insulated, armored, 12 core 4 mm^2, multi-core cable, and shall be undrilled.

7.14.15 All secondary wiring in the extensible switchgear metering modules and outdoor BMUs shall comply with the requirements for NRS 099.

7.14.16 The secondary wiring layout within the LV compartment shall be for a 3-phase 4-wire metering configuration.

7.14.17 CT and VT circuit wiring shall be numbered on both ends.

7.14.18 The VT LV fuses, LV star point connections and star point earth connection shall be situated in the LV metering compartment. The LV star point connection shall by default be earthed for the 3-ph 4- wire metering configuration.

7.14.19 All metering CT and VT secondary side earth connections shall be made within the LV metering compartment, and not within the MV compartments of the extensible switchgear metering modules or outdoor BMUs.

7.14.20 The metering CT star point shall be earthed via a solid link bar located in the LV metering compartment.

7.14.21 The selection of full or half ratio for the metering CTs shall be done on a separate terminal block situated inside the LV metering compartment and shall be achieved by connecting the CT Starpoint on the appropriate terminals for the selected ratio.

7.14.22 The CT secondary circuits shall be wired from the CT ratio selection terminal block to an approved 13-way test block with integral shorting facilities in the LV metering compartment which shall be easily accessible for the purpose of connecting test equipment.

7.14.23 Terminal blocks and test blocks fitted in the LV metering compartment shall be 13-way Campbell York England, Type 22983 front connected polycarbonate test blocks with transparent covers, or equivalent to the Engineers approval.

7.14.24 Insulated lugs and ferrules shall be used on all terminations,

with bootlace ferrules to be used for terminations on test blocks.

7.14.25 Fuses and fuse holders shall be of the blade type and shall be in compliance with Section 5 of this specification.

7.14.26 The LV compartment shall be fitted with LED indication lamps for VT Live indication.

7.14.27 The LV metering compartment shall be provided with an MV and LV wiring and connection schematic diagram which shall be affixed to the inside of the compartment door.

7.14.28 The LV secondary metering equipment shall be rated in accordance with the requirements of NRS 099.

7.14.29 The LV metering compartment shall be provided with a 25mm PVC sleeve external to the compartment and suitably glanded to and affixed to the compartment for the purpose of locating and protecting the antenna for AMI metering. Such PVC sleeve shall be installed in such a manner as to preclude the introduction of water into the interior of the LV metering compartment either by direct flow or by capillary action and shall be positioned so as to provide the maximum possible protection against vandalism. The positioning and fixing of the antenna sleeve shall be to the approval of the Engineer.

7.14.30 The LV metering compartment shall not be provided with an ammeter.

7.15 External SCADA Compartment (Outdoor Recloser Ring Main Unit & SSEG Bulk Metering Unit)

7.15.1 Where provided for in the SCADA provisions of the tendered equipment the outdoor Recloser Ring Main Unit & SSEG Bulk Metering Unit shall be fitted with an external SCADA compartment equipped with such equipment backing board, trunking, terminal blocks, conduits and other fittings as are required, as detailed in Drawing No. DR 3380 Rev 1.

7.15.2 The external SCADA compartment shall be fitted with a flush mounted, hinged door complying with the requirements of Section 8.3 of this specification that is recessed and flush within the surrounding frame and is provided with locking and lock protection facilities as specified.

7.15.3 The external SCADA compartment shall be accessible from and secured to the right-hand end of the BMU.

7.15.4 The external SCADA compartment shall comply with the requirements specified for weatherproof kiosk doors.

7.15.5 The external SCADA compartment for outdoor BMUs shall be ventilated by natural air circulation through the provision of appropriately placed, top and bottom positioned ventilation louvres and appropriate drainage holes so as to prevent internal condensation. Any such ventilation facilities shall be positioned so as to comply with the specified degree of protection.

7.15.6 All breathing and/or venting facilities in the kiosk shall be suitably vermin proofed.

7.15.7 The external SCADA compartment shall be fitted with a removable equipment backing board constructed of 20 mm blockboard which shall be of minimum dimensions 800mm (h) x 600mm (w).

7.15.8 The backing board shall be fixed with 4 x 8 mm stainless steel bolts, nuts and flat washers.

7.15.9 The external SCADA compartment shall have a minimum clear internal depth of 250 mm, measured from the mounting surface of the equipment backing board to the inner edge of the locking mechanism, locking mechanism rods and flanges, hinges or other hardware mounted on the metering compartment doors.

7.15.10 No door mounted hardware shall encroach within this minimum clearance and the external SCADA compartment door mechanism shall not encroach within this minimum clearance during any phase of operation.

7.15.11 The external SCADA compartment doors shall be sized so as to allow removal of the equipment backing board without the need to remove the door(s).

7.15.12 The LV metering compartment for extensible switchgear metering modules shall be fitted with suitable facilities for termination of multi-core cabling for connection to a remote metering cubicle, either directly into the LV compartment or into an approved multi-core cable termination box. Cable

access to the LV compartment or termination box shall be from overhead cable tray via a glanded termination. The gland plate shall be suitable for terminating a PVC insulated, armored, 12 core 4 mm^2, multi-core cable, and shall be undrilled.

7.15.13 All secondary wiring in the extensible switchgear metering modules and outdoor BMUs shall comply with the requirements for NRS 099.

7.15.14 The external SCADA compartment shall be provided with a 25mm PVC sleeve external to the compartment and suitably glanded to and affixed to the compartment for the purpose of locating and protecting the Radio Communications Unit antenna. Such PVC sleeve shall be installed in such a manner as to preclude the introduction of water into the interior of the external SCADA compartment either by direct flow or by capillary action and shall be positioned so as to provide the maximum possible protection against vandalism. The positioning and fixing of the antenna sleeve shall be to the approval of the Engineer.

7.15.15 The external SCADA compartment may share a common external housing with the BMU LV metering compartment provided that the two compartments are totally separated by a suitable steel bulkhead and are independently locked and accessed.

7.16 Pedestal or Raising Base (for Indoor Ring Main Units and Extensible Switchgear)

7.16.1 Where a pedestal or raising base is required in order to achieve the specified cable box dimensions or to allow adequate bending radii for the MV cables on indoor ring main units and extensible switchgear, this pedestal or raising base shall be supplied as a fully assembled part of the ring main unit or extensible switchgear.

7.16.2 The pedestal or raising base dimensions shall comply with the ring main unit or extensible switchgear footprint dimensions.

7.16.3 The pedestal or raising base shall be rigid, robust and completely self-supporting.

7.16.4 Provision shall be made for bolting of the pedestal or raising base to a concrete floor as necessary in order to provide for a safe installation and to comply with the equipment's

internal arc classification.

7.16.5 Flanges that are provided for the fitting of holding-down set screws shall be of a minimum of 5 mm thick steel or alternatively be reinforced to prevent bending during transportation, handling and installation.

7.17 Earth Fault Indication Equipment

7.17.1 One set of approved earth fault indication equipment comprising a split core current sensor and a self-powered control and indicating unit shall be provided with each ring main unit and outdoor BMU.

7.17.2 The control and indicating unit shall provide for manual resetting, with an automatic self-resetting facility with selectable time delay.

7.17.3 The sensitivity of this equipment shall be such that a current imbalance less than 50 A but not less than 25 A will operate the relay.

7.17.4 Earth fault indicators shall be powered by long-life battery. Tenderers shall provide with their tender full details of the battery, its expected life under normal service conditions, the means of verifying battery condition, and the routine maintenance and replacement requirements.

7.17.5 Only equipment proven on 12 kV systems will be considered. Full details of the earth fault indication equipment offered are to be submitted with the tender.

7.17.6 The control and indicating unit shall be mounted on the ring main unit or outdoor BMU such that it is clearly visible and accessible to the operator from the operating side (i.e. front) of the ring main unit (with the enclosure doors open in the case of ring main units for outdoor installation).

7.17.7 The earth fault indicator current sensor shall be wired to and temporarily secured onto the cable support clamp fitted in the left hand side switch disconnector cable termination enclosure (when viewed from the front of the ring main unit or BMU)

7.17.8 All wiring between the control and indicating unit and the current sensor shall be routed behind the front fascia of the

ring main unit.

7.17.9 For ring main units for outdoor installation and outdoor BMUs, the earth fault indication equipment shall in addition be supplied with a remote indicator which shall be mounted on the outside of the enclosure in such a manner that it can be clearly viewed from the front of the enclosure without having to open the enclosure. The remote indicator shall be visible during daylight and protected against vandalism by means of a steel tube fitted around the indicator and welded onto the enclosure.

7.17.10 The control unit and remote indicator shall not be mounted onto any removable sections of the enclosure and no wiring shall pass through these sections. If the remote indicator is mounted on the enclosure door it shall be situated as close as possible to the hinge side.

7.18 Phase Comparators

7.18.1 Phase comparators for electrical phasing-out on the VDS cable live indication system shall be portable, not integrated, hand-held Universal Phase Comparators complying fully with the requirements of SANS 61243-5.

7.18.2 Phase comparators shall provide clear and unambiguous indication of voltage-in-phase and voltage-out-of-phase via separate LED indicators (colored green and red, respectively), and shall be fitted with push button operation, low battery indication and functionality self-test.

7.18.3 Phase comparators shall be provided with phasing leads long enough to permit the phasing out across a minimum of four panels.

7.18.4 The phase comparators leads, and ancillary equipment shall be housed in a suitable rigid case, to approval.

8 WEATHERPROOF KIOSK

8.1 General

8.1.1 The outdoor ring main units, outdoor recloser ring main units, outdoor BMUs and outdoor SSEG BMUs shall be supplied assembled within an internal arc classified and tested

weatherproof kiosk complying with the requirements for enclosures detailed in SANS 62271-202 and complying with SANS 1874 and NRS 099, for outdoor ring main units and outdoor BMUs respectively.

8.1.2 The weatherproof kiosks shall be manufactured from 3CR12 corrosion resistant steel.

8.1.3 The weatherproof kiosks and all associated compartments shall be ventilated by natural air circulation through the provision of appropriately placed, top and bottom positioned ventilation louvres and appropriate drainage holes so as to prevent internal condensation. Any such ventilation facilities shall be positioned so as to comply with the specified degree of protection and shall not detract from the tested internal arc classification.

8.1.4 All breathing and/or venting facilities in the kiosk shall be suitably vermin proofed.

8.1.5 The kiosk roof, doors and compartments shall be so designed to preclude the possibility of pooling or retention of water.

8.1.6 The weatherproof kiosk material (i.e. 3CR12) shall be clearly identified by means of a metal label affixed in a permanent fashion to the door adjacent to the steel documentation pocket.

8.2 Weatherproof Kiosk Mounting and Dimensions

8.2.1 The outdoor ring main units, outdoor recloser ring main units, outdoor BMUs and outdoor SSEG BMUs, assembled within their IAC weatherproof kiosk, shall be suitable for mounting on concrete plinths.

8.2.2 The base frames of the internal arc classified weatherproof kiosks for outdoor ring main units, outdoor recloser ring main units, compact outdoor BMUs and compact outdoor SSEG BMUs shall be dimensioned so as to fit on the corresponding concrete plinths detailed in SANS 1874 (for ringmain units with the corresponding number of modules) without overlap of the base beyond the dimensions of the plinth.

8.2.3 The base frames of the internal arc classified weatherproof

kiosks for standard outdoor BMUs and standard outdoor SSEG BMUs shall be dimensioned so as to fit on the corresponding concrete plinths detailed in NRS 099 without overlap of the base beyond the dimensions of the plinth.

8.2.4 The design of the outdoor ring main units, outdoor recloser ring main units, outdoor BMUs and outdoor SSEG BMUs and their weatherproof cubicles shall be such that the MV cable entry cut- outs of the plinth correspond exactly with the cable termination enclosures and base frame of the equipment and ensure that the internal arc classification of the equipment is fully maintained.

8.2.5 Detailed requirements for the concrete plinth design, but in general compliance with the dimensional and layout requirements of SANS 1874 or NRS 099, as applicable, shall be provided by the Tenderer with the Tender documentation.

8.2.6 Tenderers shall provide with their tenders a set of dimensioned detail drawings showing the base frame and cable entry for each RMU and BMU size and the relevant concrete plinth, confirming proper alignment of the design with the plinth.

8.2.7 Flanges that are provided for the fitting of holding-down set screws shall be of a minimum of 5 mm thick steel or alternatively be reinforced to prevent bending during transportation, handling and installation.

8.2.8 Suitable lifting eyes designed to lift the kiosk with the ring main unit or BMU installed within shall be provided on the kiosk. The lifting eyes shall have a minimum diameter of 30 mm.

8.2.9 The lifting eyes and associated facilities shall be designed such that standard slings can be utilized without damage being caused to the kiosk, either by the tensioned slings or by the lifting eyes and associated facilities.

8.3 Doors

8.3.1 The doors shall be watertight and vermin proof and shall maintain the IP rating of the enclosure or compartment when in the closed position.

8.3.2 All doors shall be designed and constructed in such a way as

to minimize the possibility of vandalism and shall be flush mounted (i.e., recessed and flush with the door frame) when in the closed position. Gaps between the door and the adjacent enclosure body shall be designed with the minimum mechanically acceptable clearances in order to prevent levering open of the door through the insertion of implements between the door and the enclosure.

8.3.3 The doors shall be provided with means to prevent over swing when opening and a strong and robust, rigid wind stay to secure the door in the open position at a minimum angle of 90º. It shall be possible to operate all equipment with the relevant door in the open stayed position.

8.3.4 The doors, when held in the open position using the wind stay, shall be capable of withstanding the wind pressure in accordance with SANS 62271-202.

8.3.5 All doors shall be fitted with neoprene, or equivalent to approval, gaskets to provide a tight and durable seal to prevent ingress of contaminants and moisture. Doors shall exert uniform pressure at all points on the gasket when the door is closed.

8.3.6 The door frame or door of each enclosure and compartment shall have suitable design provisions to ensure that water flowing off the top of the weatherproof kiosk flows away to the side of the enclosure frame and does not rest or pool against the door gasket or gain ingress past the gasket.

8.3.7 All doors shall have internal, concealed hinges so as to reduce vulnerability to vandalism. Door hinges shall be manufactured from stainless steel and shall be to the Engineer’s approval and shall be suitably reinforced and of sufficient strength to comply with the specified vandalism requirements.

8.3.8 Hinges shall be strong and robust, and the hinges and their mountings shall be precise and shall not be subject to sag or alignment drift during transport or when the doors are opened and closed. The hinge design shall be suitable to ensure correct alignment of the doors, the locking mechanism and the Allen key bolt for the lifespan of the kiosks, in both single door and double door kiosks.

8.3.9 All doors shall be provided with a robust Barker Nelson 25 series (or equivalent to approval) three-point locking

mechanism with padlock facilities suitable for a padlock of shackle diameter 8 mm.

8.3.10 The three-point locking mechanism for the outdoor BMU & SSEG BMU LV metering compartment and SCADA compartment doors shall have a stainless steel Perano 101-1109 (or equivalent to the Engineer's approval) padlock able swing handle. The swing handle shall be mounted such that it is in the horizontal position when closed

8.3.11 The vertical rods of the three-point locking mechanism shall be supported in four positions (two above and two below the central mechanism) in addition to the central mechanism so as to limit the opportunity for flexing of the rods under mechanical duress. These supports shall be positioned at the outer end of each rod and approximately 100 mm back from the end of the rod and approximately 100 mm apart. The inner support shall have a slotted hole to allow for necessary pivoting of the rod in the plane parallel to the door.

8.3.12 The locking mechanism vertical rods shall be stainless steel round bar of minimum diameter 10 mm.

8.3.13 In addition, all doors shall be fitted with a stainless-steel Allen key bolt type locking system using an M12 bolt with a 10 mm Allen keyed head. The Allen key locking system when in the fully screwed- in position shall obstruct the Barker Nelson locking mechanism from being opened. The Allen bolt head shall either be flush with the door when screwed in or shall be protected by a suitable welded collar.

8.3.14 The degree of security of the doors, door locking mechanisms and door hinges shall be such that they withstand a force of 1000 N when any part of the door is subjected to a pull of such force applied in accordance with SANS 1029 or an equivalent force applied by a lever inserted between the door rim and the enclosure or frame. The door shall remain firmly closed under such test conditions.

8.3.15 Padlocks will be supplied by others.

8.3.16 All doors other than the LV metering compartment and SCADA compartment doors shall be provided with a lock protection facility fabricated from 4 mm 3CR12 stainless steel

8.3.17 The LV metering compartment and SCADA compartment door on outdoor BMUs & SSEG BMUs shall be provided with

a lock protection facility.

8.3.18 The lock protection facility shall be an integral part of the door and shall be affixed to the door by a continuous weld or by the use or a minimum of 6 x M8 bolts, permanently affixed to the inner flange of the lock protector box and secured on the inner side of the door with locking nuts.

8.3.19 The lock protection facility shall be designed to prevent the use of bolt cutters, levers or heavy implements to damage the padlock or locking mechanism but shall provide good access to both the padlock and mechanism handle for normal operation.

8.3.20 The lock protection facility shall have an expanded mesh, or equivalent to approval, at the top designed such that the padlock shall be visible through the mesh. The mesh shall be at least 1,6 mm thick and the mesh grid less than 10 mm.

8.3.21 The lock protection facility shall have a hole suitable for insertion of a 10 mm Allen key to permit unobstructed operation of the Allen key bolt.

8.3.22 The door handle shall be in the horizontal position when closed and padlocked so as to place the padlock as far as possible from the opening at the bottom of the lock protection facility.

8.3.23 Alternative tamper-proof locking mechanisms/systems may be offered and will be subject to approval of the Engineer.

8.3.24 A steel documentation pocket shall be provided on the inside of the kiosk door for the safekeeping of relevant A4 sized documents. The means of securing the pocket (e.g., pop rivets) shall not protrude through the door.

8.4 Electrical Bonding

8.4.1 The kiosk doors, and if applicable, all steel enclosure sections, shall be electrically bonded to the main steel enclosure by means of a tinned copper braid bonding conductor of minimum cross- sectional area 4 mm^2.

8.4.2 The main steel enclosure shall be electrically bonded to the ring main unit earth bar by means of copper bonding conductor (i.e. tinned copper braid or PVC-insulated

stranded copper cable) of minimum cross-sectional area 70 mm^2.

8.5 Painting and Protection Against Corrosion

8.5.1 Painting and corrosion protection of interior and exterior surfaces of the weatherproof kiosk shall comply with the requirements of SANS 780. The following additional requirements are to be complied with for exterior surfaces.

8.5.2 3CR12 steel shall be abrasive blasted and then passivated prior to painting.

8.5.3 The 3CR12 components shall be painted with an approved and appropriate primer and with two coats of an approved polyurethane-based heat fused epoxy powder coating of Color C12 (Avocado) to SANS 1091 in accordance with the requirements of SANS 780.

8.5.4 Suitable steps shall have been taken to ensure a satisfactory bond between the protected surfaces and the paint to prevent peeling.

8.5.5 The thickness of the paint including the primer shall not be less than 50 µm.

8.5.6 Alternative corrosion protection systems may be considered. Manufacturers shall submit their proposed corrosion protection specifications to the Engineer for approval.

8.5.7 All external nuts and bolts shall be manufactured from stainless steel. Care shall be taken to ensure that nuts and bolts are not over tightened such that the threads are damaged, and the nuts and bolts cannot be loosened and/or retightened.

9 SF_6 GAS REPLENISHMENT AND / OR RECOVERY

9.1 In accordance with SANS 1874 the supplier of SF_6 ring main units is required to provide a service to recover and replenish SF_6 gas.

9.2 It is a **mandatory** requirement of this specification and resulting contract(s) that the Contractor shall be responsible for the following with respect to the ring main units,

extensible switchgear and outdoor BMUs of their original equipment manufacturer (OEM), utilizing fully trained and accredited staff of the OEM or their duly accredited agent:

9.2.1 The assessment of the cause of gas leaks on the OEM's equipment in Municipal stores or in service, using calibrated SF6 gas sniffing equipment or other appropriate test equipment in accordance with established best practice. Units in service will be located at substations within the municipal area.

9.2.2 The repair and topping up in stores, on site or at the OEM's or accredited agent's workshops of such leaks, where due to latent defects or covered by guarantee, at no cost to the Municipality Transport of the equipment from the Municipal stores to the OEM's or accredited agent's workshops and back is the responsibility of the contractor;

9.2.3 The repair and topping up in stores or on site of such leaks that are not due to latent defects nor covered by guarantee, at the rates detailed in the Price Schedule **(Volume 2, Part 5)**. Such rates should include for transport of OEM's or accredited agent's staff to the substation site, situated within the municipal area and in the overwhelming majority of cases within one hour's drive from the Municipality Stores Complex.

9.2.4 The safe recovery of the SF6 gas from the OEM's ring main units, extensible switchgear and outdoor BMUs located at the Municipality Stores after recovery from service for scrapping, at the rates detailed in the Price Schedule (5).

9.3 Where OEM ring main units, extensible switchgear and outdoor BMUs that have leaked are not repairable on site the equipment will be removed from service and transported to and from the OEM's or accredited agent's workshops by the Municipal staff. Repairs and gas replenishment and any parts required on such equipment will be quotation based.

9.4 Contractor facilities, staff and equipment for handling, recovery and disposal of SF6 gas shall carry out such work in accordance with the requirements laid out in NRS 087 and be certified accordingly.

9.5 The OEM's ring main units, extensible switchgear and outdoor BMUs that have been recovered from service and require removal of SF6 gas as detailed in 15.2.4 above will

be located in a dedicated holding area at the Municipal store for this purpose. Tenderers shall provide detail in their tender of the space necessary for this purpose and the designation, type and power supply requirements of the mobile equipment to be used for the gas recovery.

9.6 The Contractor shall be responsible for the complete purging and the safe disposal and destruction of the SF_6 gas by an accredited disposal authority in accordance with established best practice, and the rendering of the ring main unit, extensible switchgear and outdoor BMU environmentally suitable for scrapping with respect to the SF_6 gas and any related byproducts or residues.

9.7 On completion of the purging of gas the Contractor shall provide a formal certificate from the accredited disposal authority identifying and certifying the ring main unit, extensible switchgear or outdoor BMU to be totally clear of SF_6 gas and any related byproducts or residues and in suitable condition for scrapping.

9.8 The Contractor shall in addition provide an accredited disposal authority certificate of disposal certifying that the volume of SF_6 gas recovered from the ring main unit, extensible switchgear and outdoor BMU has been destroyed in accordance with established best practice. Certificates of bulk SF_6 gas disposal will be accepted provided that there is a clear inventory detailing the contribution of each ring main unit, extensible switchgear and outdoor BMU and all other sources to the total volume destroyed, and that all sources are clearly identified by serial number or other unique identifier.

9.9 The Tenderer shall provide full details with their tender of the SF_6 gas recovery program me and detailed quality processes for site repair and topping up and for gas purging, disposal and certification for scrapping.

10 PACKING AND DELIVERY

10.1 The Contractor shall be responsible for the packing, loading, transport and off-loading of the Goods from the place of manufacture, whether this is at his own works or those of any supplier, to the Employer’s Stores or to site and shall provide all labor, plant and material necessary for the offloading.

10.2 The method of packing shall provide adequate protection for transportation of the equipment contained within. The method of packing and precautions to be taken during transport shall be clearly marked on the appropriate drawings.

10.3 Any loose parts shall be boxed in substantial crates or containers to facilitate handling in a safe and secure manner. Each crate or container shall be marked clearly on the outside of the case to show the mass the crate is bearing and the correct position for the slings. Each crate or container shall also be marked with the notation of the part or parts contained therein, contract number and port of destination, and shall become the property of the Employer after delivery.

10.4 Loose parts and accessories forming part of each ring main unit, extensible switchgear panel or BMU or necessary for the assembly of such switchgear shall be dispatched and delivered with the switchgear. Payment will not be authorized per item until all relevant loose parts and accessories have been delivered. Such loose parts shall be crated or packaged such that all parts and fasteners necessary for each assembly are contained in a single container. The container shall be marked with the container number and a complete bill of materials and components contained there-in, together with the relevant part numbers and reference to the drawing number detailing assembly of such parts.

10.5 The packing lists, details of the number, size, marks, mass and contents of each package and drawings shall be dispatched to the Engineer giving full and clear details of the contents of the packages and crates. Any special storage/handling requirements, shelf-life limitations etc. shall be clearly indicated. An electronic copy of the complete packing lists shall be provided to the Engineer immediately after the items are dispatched.

10.6 Transit/storage bushing protection covers shall be fixed to the equipment to prevent damage to bushings.

10.7 Any damage due to defective or insufficient packing or that occurs during loading, transport or off- loading of the Goods shall be made good by the Contractor at his own expense and within reasonable time when called upon by the Employer to do so.

10.8 The Contractor shall inform himself fully as to all relevant

transport facilities and requirements and loading gauges and ensure that the equipment as packed for transport complies with the South African highway regulations and/or conforms to the limitations of the transport facilities of Transnet Ltd. The Contractor shall also be responsible for verifying the adequacy of any cranes required for off-loading at the port of entry, at the Employer's Stores and at Site.

10.9 The Contractor shall take reasonable steps to prevent damage to any highways or bridges by his traffic and shall select routes, choose and use vehicles and restrict and distribute loads so that the risk of damage shall be limited as far as is reasonably possible. The Contractor shall immediately report to the Engineer any claims made against him arising out of alleged damage to a highway or bridge.

10.10 Access to the Stores is by road only.

11 DRAWINGS AND INFORMATION

11.1 Drawings

Tenderers shall submit with their tenders the following drawings:

11.1.1 Dimensioned drawings indicating the general arrangement of the ring main units, extensible switchgear (complete with any necessary pedestals or raising bases), outdoor BMUs and weatherproof kiosks.

11.1.2 Dimensioned detail drawings for each ring main unit, extensible switchgear and outdoor BMU configuration showing all operating and cable test facilities, cable compartments, cable clamping, cable termination arrangements and clearances between bushings and from bushing centers to earth.

11.1.3 Drawings shall show operating and cable test facilities fully dimensioned relative to the floor or ground level and the front of the unit, in the service configuration of the units as supplied complete with all necessary pedestals and raising bases.

11.1.4 Section drawings of each ring main unit and extensible switchgear type showing general details of construction and all principal components and dimensions, including internal arc overpressure relief provisions and energy paths for each

main compartment.

11.1.5 Dimensioned detail drawings of the BMU and SSEG BMU LV Metering Compartment detailing fittings and layout.

11.1.6 Dimensioned detail drawings of the Recloser RMU and SSEG BMU SCADA Compartment (External compartment or RMU Top Unit, as offered with the particular design) detailing fittings and layout.

11.1.7 Civil Engineering / Installation drawings for each indoor ring main unit and extensible switchgear type showing requirements for switch room design and equipment positioning for indoor installation.

11.1.8 Dimensioned detail drawing of the weatherproof kiosks, their base frames, doors and lock protector facilities confirming compliance with the specified requirements.

11.1.9 Civil Engineering / Installation drawings for outdoor ring main units and BMUs that include dimensioned plan views detailing the base frame and cable entry for each RMU and BMU size and the relevant concrete plinth, detailing proper alignment of the design and the base frame with the plinth.

11.1.10 Section drawings for busbar couplings and / or external busbars showing an expanded view and an installed view and including details of provisions for voltage stress relief.

11.1.11 Full electrical schematic diagrams including details of electrical interlocks and protection schematics shall be submitted by the successful Tenderer for formal approval before manufacture of the equipment is commenced.

11.2 Instruction Books

Copies, in English, of operating and maintenance instructions covering each type of equipment provided shall be supplied by the Contractor before delivery, and these shall include full detailed drawings and detailed instructions for the installation and assembly of the switchgear and busbar couplings and / or external busbars. A copy shall also be provided in electronic (pdf). These shall include a comprehensive spare parts catalogue.

12 PARTICULARS

12.1 Tenderers shall submit with their tenders' full particulars of the Goods offered and shall complete the Schedules attached hereto in full.

12.2 Tenderers shall detail actual particulars, parameters or dimensions specific to the Goods offered and shall not simply refer to other standards or specifications.

12.3 Sufficient technical data, diagrams, drawings and relevant information shall be submitted with the tender to enable the characteristics and merits of the Goods offered to be ascertained, including the design provisions to ensure that the units are fully weatherproof. Drawings complying with the requirements laid out above shall accompany the tender submission.

12.4 The manufacturers and the places of manufacture, testing and inspection of the various portions of the Works shall be stated in the Schedules together with full details of the location and capabilities of their service / repair facility situated closest to George. No changes to these particulars will be permitted after contract award except under exceptional circumstances and with detailed motivation by the Contractor. Such changes shall be subject to the written agreement of the Engineer

12.5 Tenderers who are not the Original Equipment Manufacturers (OEMs) of the Goods detailed in the Price Schedule shall provide a letter from the OEM of the relevant Goods verifying that they are an authorized reseller or distributor of that equipment. Such Tenderers shall include details of their experience as authorized resellers or distributors of the Goods detailed in the Price Schedule as an annexure to Schedule 15.

12.6 Tenderers shall tender for a single manufacturer only per Goods item, either the Tenderer or a separate OEM as envisaged above. The Tenderer is required to commit to the single manufacturer per item for the full duration of the contract and is to provide the detailed particulars and drawings as listed above that are specific to that manufacturer.

12.7 Tenderers shall submit their Company Organogram, and in addition a Company Organogram for the OEM if the

Tenderer is not the OEM. Organograms shall detail the structure of the Tenderer's and OEM's companies and the relationships between the tendering, manufacturing, technical support, quality assurance and administrative staff, departments, and duties within each company.

12.8 Information should be submitted detailing the quantity of similar ring main units, extensible switchgear and BMUs manufactured and supplied by the Tenderer and/or the OEM and in service in South Africa, as well as the details of existing users of the Goods tendered.

12.9 All apparatus should comply with this Specification. Any departures from the requirements of this Specification or non-compliance shall be stated by the Tenderer clause-by-clause in the schedules and may be accepted at the Engineer's discretion. Undisclosed non-compliance with requirements of the Specification shall result in the Contractor being bound to the requirements of the Specification.

12.10 No departure shall be implemented without the prior approval of the Engineer.

12.11 The Contractor shall be responsible for any discrepancies, errors or omissions in the particulars and guarantees, whether or not such particulars and guarantees have been approved by the Engineer.

12.12 All details given in this Specification and the drawings forming part of it have been carefully compiled but the onus is on the Tenderer to satisfy himself as to the accuracy thereof.

13 TRAINING

13.1 Training shall be provided in George to enable the Employer's staff to install, maintain and operate the equipment offered.

13.2 All Tenderers offering any of Items A1 to A8, B1 to B11, C1, C2 and / or C3 are required to tender for the respective training and if pricing for training is not detailed it will be deemed to be included in the equipment pricing, as provided for in accordance with Clause 5.10 of the Pricing Instructions

of the Price Schedule

13.3 The training course for the switchgear shall include, but not be limited to, the following:

13.3.1 Detailed overview of equipment
13.3.2 Theory of operation
13.3.3 Interlocks and Safety Features
13.3.4 Installation and commissioning
13.3.5 Preventative maintenance
13.3.6 Maintenance manual review
13.3.7 Testing, troubleshooting and configuration
13.3.8 Repairs
13.3.9 Practical Demonstration

13.4 The training details submitted with the Tender shall include a description of the contents and duration of the course and the prerequisites, if any, required of course participants. The outlines shall be in sufficient detail to evaluate the course material.

13.5 The training instructors shall be South African based staff members of the OEM or their Agent and shall have been certified by the OEM as training instructors in the particular equipment offered.

13.6 The instructors shall have a complete and thorough knowledge of the equipment and course materials and shall have proven prior experience in conducting the specified training.

13.7 As the training may need to be conducted on more than one occasion during the contract period the training interventions shall neither require nor be priced to be conducted by overseas equipment specialists. Training interventions that appear excessively priced will be tested for reasonableness in accordance with the provisions of the Conditions of Tender and these items (and the associated RMU, BMU and Switchgear items) will not be awarded without full and acceptable justification and detailed breakdown of costing by the Tenderer.

13.8 Each course participant shall receive a copy of the training manuals and other pertinent materials with all changes and revisions to manuals and other documentation used during the training courses.

13.9 All training will be undertaken at the Employer's premises.

13.10 The training course shall be given to classes of maximum size of 5 individuals and the training course per class shall be conducted and completed over a single, full day. The tenderer shall allow for five classes over five different days.

13.11 On completion of the training each candidate shall be provided with certification of attendance of the course, with copies of the certification being provided to the Employer.

13.12 The price for each training intervention shall cover the complete training and include all preparation, travelling, accommodations and incidental costs including all course materials. The price tendered in the Pricing Schedule shall be for the full training intervention (i.e. One week (five working days) encompassing five repeats in succession of the single day course). The training price is not a price per person nor a price per day.

14 TESTS AND INSPECTIONS

14.1 Inspections

14.1.1 During manufacture and prior to dispatch the equipment may be inspected by the Engineer or his duly appointed representative who will call for such tests as he may consider necessary. To this end, the Engineer or his representative shall, during normal working hours, be given all reasonable access and facilities for the carrying out of his duties and shall have the right of entry into the factory of the manufacturer and the factory of any sub-contractor to the manufacturer, where work in accordance with this specification may be in progress.

14.1.2 Before the dispatch of any equipment from the factory of manufacture it shall have been inspected by the Engineer or his duly appointed representative and an Acceptance Certificate shall have been issued. The manufacturer shall notify the Engineer at least one week in advance of the proposed dates for final inspections, and units shall be fully completed prior to the day of the final inspection.

14.2 Type Tests

14.2.1 The ring main units, extensible switchgear and outdoor BMUs, complete with any pedestals, raising bases, current transformers, voltage transformers, protective relays, weatherproof kiosks and other equipment necessary to comply with the requirements of this specification shall have passed the type tests as are laid down in SANS 1874, SANS 62271-200, SANS 62271-202, SANS 61869-2, SANS 61869-3, IEC 60255 and NRS 099.

14.2.2 The tests shall have been conducted by an accredited independent test laboratory and approved by the Engineer. The testing laboratory shall be accredited by a national accreditation body that is a member of the International Laboratory Accreditation Cooperation. Type tests for extensible switch panels shall include certification for an assembled switchboard including the busbar couplings or external busbars.

14.2.3 The Tenderer shall submit with his tender a Schedule of Type Tests detailing all completed type tests applicable to each item tendered, as specified. The schedule shall detail the full description of the item tested, the test authority, the type test certificate numbers, the applicable standard and the specific tests covered by the certificate. Type tests not detailed on the schedule will be deemed not to have been completed.

14.2.4 The Tenderer shall submit copies of the cover sheets, the tested equipment detail pages and the results summaries for the type test certificates detailed in the Type Tests Schedule, as well as certificates of rating.

14.2.5 Tenderers shall not submit the full type test certificates but only the relevant pages detailed above. The full type test certificates shall be made available to the Engineer for review on request.

14.2.6 Only identical units to those successfully type tested will be acceptable. Non-applicable type test certificates should not be submitted. Tenderers shall submit copies of complete detailed drawings of internal connections and facilities as type tested.

14.3 Routine Tests

14.3.1 Routine tests as specified in SANS 1874, SANS 62271-200, SANS 62271-202, SANS 61869-2, SANS 61869-3, IEC 60255, NRS 099 and other applicable standards shall be

carried out on all ring main units, extensible switchgear, outdoor BMUs, protection relays, current transformers, voltage transformers and other equipment prior to dispatch, and shall be witnessed by the Engineer or his duly appointed representative unless specifically waived by the Engineer.

14.3.2 Such tests shall include routine partial discharge testing on all MV bushings, current transformers and voltage transformers.

14.3.3 Routine accuracy tests on metering current transformers and voltage transformers shall be carried out by an accredited test laboratory.

14.3.4 In addition to the requirements specified above, the following routine tests should be carried out by the manufacturer on the protection equipment before unit dispatch:

14.3.4.1 CT polarity, ratio and magnetization curve tests.

14.3.4.2 OCEF Secondary injection testing of the relay at 1x (to verify pick-up, Is), 2x, 5x, 10x (to verify definite time HI set setting, Is>>) setting for OC and EF. Alternatively, these secondary injection tests can be replaced by primary OCEF injection tests at 1x (pick-up), 2x, 5x, 10x (HI set) setting for OC and EF, with the circuit breaker closed.

14.3.4.3 Verification that the OCEF relay trips the circuit breaker.

14.3.4.4 Protection relays are to be configured and tested in accordance with the generic settings below (or next closest achievable settings):

OC pickup (I>)	125 A (or closest lower available setting e.g., 122.5 A)
OC IDMT curve	NI
OC time multiplier	0,1
OC definite setting (I>>)	10 x I> (or 9,5 x I> if 10 x not possible)
OC definite time	0 ms (Instantaneous or lowest available setting)
EF pickup (Io>)	37,5 A (or closest higher available setting e.g., 40 A)
EF IDMT curve	NI
EF time multiplier	0,1

EF definite setting (Io>>)	10 x Io> (or 9,5 x Io> if 10 x not possible)
EF definite time	0 ms (Instantaneous or lowest available setting)

14.3.4.5 Copies of the test results are to be furnished with each panel.

14.3.5 Certificates giving the full results of all tests made on the equipment shall be submitted to the Engineer in electronic (pdf) format by the Contractor for approval prior to or at the time of delivery of the equipment. All routine test certification shall be dated and signed by the manufacturer's test engineer. Equipment will not be formally accepted until such time as full routine test certification has been submitted and approved.

15 In addition, all routine test certification shall be submitted electronically (in pdf format) to the Engineer prior to delivery of the equipment, for the Employer's records.

16 QUANTITIES

16.1 Tenderers should note that the quantities on the Price Schedule are anticipated quantities only for the purpose of indicating approximate usage levels. The Employer will order only those quantities that are actually required from time to time and may not order any quantity at all depending on project and customer demand.

17 DELIVERY PERIOD

17.1 The specified delivery period per item is detailed in the Price Schedule.

17.2 Tenderers shall detail in the space provided in the Price Schedule the tendered delivery period per item. Tendered delivery periods that exceed the specified delivery period will be to the approval of the Engineer.

17.3 Tendered delivery periods that are considered by the Engineer to be excessive and that would have an adverse effect on the Employer's material stock planning and project execution may result in the Tender being deemed non-responsive.

17.4 The contracted delivery period shall be the specified delivery

period or an alternative tendered delivery period that has been considered and formally approved by the Engineer at the time of tender award.

17.5 The Contractor shall deliver Goods ordered from time to time in accordance with this tender within the contracted delivery period unless specifically approved to the contrary by the Engineer.

17.6 The Contractor shall on placement of new purchase orders by the Employer prepare a detailed delivery schedule that accords with the contracted delivery period and submit this to the Engineer within 5 working days of the placement of the orders.

17.7 In cases where large quantities of Goods are ordered simultaneously staggered deliveries that extend beyond the contracted delivery period will be considered provided that the delivery schedule has been formally approved by the Engineer.

17.8 Contract deliveries that exceed the contracted delivery period and for which the extended delivery period has not been formally approved by the Engineer will be subject to penalties in accordance with the Special Conditions of Contract.

18 CONTRACT AWARD

18.1 Recommended and Alternative Service providers

18.1.1 George Municipality intends to appoint two tenderers per Item (the highest ranked tenderer “the Recommended Service provider” and in addition a “Alternative Service provider”, where possible offering goods from an alternative manufacturer) for the allocation of work. If insufficient responsive bids are received, George Municipality reserves the right to appoint fewer tenderers, or not to appoint any tenderers at all.

18.1.2 Purchase Orders will in the first instance be placed by the Employer with the Recommended Service provider.

18.1.3 Should the Recommended Service provider not be able to meet the contractual commitments relating to a particular order or orders, either in terms of delivery performance or of

compliance with the requirements of the specification, the Service provider shall advise the Employer within 5 working days of receipt of the order(s). The purchase order(s) will thereafter be cancelled, and orders placed with the Alternative Service provider.

18.1.4 Should the Recommended Service provider continually fail to meet the contractual commitments the Employer reserves the right to initiate the Default process, during which the Service provider will be afforded an opportunity to address in consultation with the Employer his contract performance and failure to meet the contractual commitments.

18.1.5 During the course of any such Default process the Employer reserves the right to place orders with the Alternative Service provider instead of the Recommended Service provider and shall retain this right until such time as the Recommended Service provider has either corrected the non-compliance with the contractual commitments or has provided a proposal to correct the non-compliance with the contractual commitments that is to the satisfaction of the Employer.

18.1.6 In the event that the Recommended Service provider is formally placed in Default in terms of the specification the contract shall be placed with the Alternative Service provider for the balance of the contract period.

18.2 Continuity of Equipment and Suppliers / Manufacturers

18.2.1 Contract award will be based, inter alia, upon the technical information supplied with the successful Tenderer's or Tenderers' submissions, and no changes in the equipment tendered or in the equipment Supplier(s) / Manufacturer(s) will be permitted during the validity period of the contract. Changes sought by the Contractor due to exceptional circumstances should be requested formally by the Contractor and will be subject to the prior formal approval of the Engineer.

19 HEALTH AND SAFETY PLAN

19.1 The successful Tenderer(s) will be responsible for the safe loading, transport, delivery and off- loading of the goods strictly in accordance with the requirements of the Occupational Health and Safety Act and all other relevant legislation. To this end the successful Tenderer(s) shall provide a detailed Health and Safety Plan to the City within

two weeks of commencement of contract detailing the specific provisions put in place to ensure compliance in this regard.

20 TRADE NAMES OR PROPRIETARY PRODUCTS

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

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

PRICING INSTRUCTIONS

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

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

1.1 State the rates and prices in Rand unless instructed otherwise in the tender conditions.

1.2 Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes (except Value Added Tax (VAT), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable 14 days before the closing time stated in the General Tender Information.

1.3 All prices tendered must include all expenses, disbursements and costs (e.g. transport, accommodation etc.) that may be required for the execution of the tenderer’s obligations in terms of the Contract, and shall cover the cost of all general risks, liabilities and obligations set forth or implied in the Contract as well as overhead charges and profit (in the event that the tender is successful). All prices tendered will be final and binding.

1.4 All prices shall be tendered in accordance with the units specified in this schedule.

1.5 The Basis for Evaluation of Tenders is detailed in Clause 2.3.10.4 of the Conditions of Tender.

1.6 Tender Items A1 to A3, B1 to B11, C1 to C3, D1 and D7 to D13 will be individually competitively evaluated and tenderers may tender for any of these items.

1.7 Tender Items A4 to A16 are required for assembly of substation switchboards and shall be awarded to a single Tenderer (and based on a common manufacturer and model range). Tenderers are required to have tendered for all of Items A4 to A16 in order to be considered for award for these Items.

1.8 Tender Items D2 to D6 are spares items relating to Items A6 and A9, B3, B6, B8, B9, B10, C1 and / or C2 and tenderers offering any of these Items should tender for the corresponding Items D2 to D6.

1.9 An award for Items D11–D13 will be made to each Tenderer awarded any of corresponding Items A1-A8, B1-B11, C1, C2 or C3.

1.10 An alternative tenderer may be appointed.

1.11 The successful tenderer is required to perform all tasks listed against each item and must tender prices/rates on all linked Items as per 1.6 to 1.9 above if any of the linked Items are tendered. **A linked item for which a rate is required but against which no rate is entered, or if anything other than a rate or a nil rate (for example, a zero, a dash or the word "included" or abbreviations thereof) is entered against an item, it will also be regarded as a nil rate having been entered against that item, i.e. that there is no charge for that item. The Tenderer may be requested to clarify nil rates, or items regarded as having nil rates; and the Employer may also perform a risk analysis regarding the reasonableness of such rates.**

PRICING SCHEDULE

ITEM CATEGORY A: RING MAIN UNITS FOR INDOOR INSTALLATION

Item No.	Description	Unit price delivered and Off-loaded (All Applicable Taxes Included) (R)	Tendered Delivery Period from date of Official Purchase Order (Weeks)
Individually appointed (Per Item)			
A1	3-way non-extensible ring main unit comprising 2 switch- disconnectors and 1 circuit breaker combination, as specified	R	
A2	4-way non-extensible ring main unit comprising 3 switch- disconnectors and 1 circuit breaker combination, as specified	R	
A3	4-way non-extensible ring main unit comprising 2 switch- disconnectors and 2 circuit breaker combinations, as specified	R	
Appointed as a cluster (A4 – A16)			
Item No.	**Description**	**Unit price delivered and Off-loaded (All Applicable Taxes Included) (R)**	**Tendered Delivery Period from date of Official Purchase Order (Weeks)**
A4	2-way extensible switchgear comprising 2 switch-disconnector modules, as specified	R	
A5	1-way extensible switchgear switch-disconnector module, as specified	R	
A6	1-way extensible switchgear circuit breaker module, as specified	R	
A7	1-way extensible switchgear switch-fuse combination module, as specified	R	
A8	Extensible switchgear MV bus-section module	R	

A9	Extensible switchgear MV metering module, as specified	R	
A10	Screened busbar couplings for in-line busbar connections (where applicable), as specified, per set of three complete	R	
A11	Screened busbar end blanking plugs for in-line busbar connections (where applicable), as specified, per set of three complete	R	
A12	Screened Type C end adapter for external busbars (where applicable), as specified, per set of three complete	R	
A13	Screened Type C cross adapter for external busbars (where applicable), as specified, per set of three complete	R	
A14	Screened Type C dead end cap for external busbars (where applicable), as specified, per set of three complete	R	
A15	Screened 630A long external busbar (where applicable), as specified, per set of three complete	R	
A16	Screened 630A short external busbar (where applicable), as specified, per set of three complete	R	
Total Rates for Items A4 to A16 (All Applicable Taxes Included)		**R**	

ITEM CATEGORY B: RING MAIN UNITS FOR OUTDOOR INSTALLATION

Item No.	Description	Unit price delivered and Off- loaded (All Applicable Taxes Included) (R)	Tendered Delivery Period from date of Official Purchase Order (Weeks)
Individually appointed (Per Item)			
B1	3-way non-extensible ring main unit comprising 3 switch- disconnectors, enclosed within a weatherproof kiosk, as specified	R	

B2	3-way non-extensible ring main unit comprising 2 switch- disconnectors and 1 switch-fuse combination, enclosed within a weatherproof kiosk, as specified	R	
B3	3-way non-extensible ring main unit comprising 2 switch- disconnectors and 1 circuit breaker, enclosed within a weatherproof kiosk, as specified	R	
B4	4-way non-extensible ring main unit comprising 4 switch- disconnectors, enclosed within a weatherproof kiosk, as specified	R	
B5	4-way non-extensible ring main unit comprising 3 switch- disconnectors and 1 switch-fuse combination, enclosed within a weatherproof kiosk, as specified	R	
B6	4-way non-extensible ring main unit comprising 3 switch- disconnectors and 1 circuit breaker, enclosed within a weatherproof kiosk, as specified	R	
B7	4-way non-extensible ring main unit comprising 2 switch- disconnectors and 2 switch-fuse combinations, enclosed within a weatherproof kiosk, as specified	R	
B8	4-way non-extensible ring main unit comprising 2 switch- disconnectors and 2 circuit breakers, enclosed within a weatherproof kiosk, as specified	R	
B9	5-way non-extensible ring main unit comprising 2 switch- disconnectors and 3 circuit breakers, enclosed within a weatherproof kiosk, as specified	R	
B10	5-way non-extensible ring main unit comprising 1 switch- disconnector and 4 circuit breakers, enclosed within a weatherproof kiosk, as specified	R	
B11	3-way non-extensible **Recloser ring main unit** comprising 2 switch-disconnectors and 1 circuit breaker, enclosed within a weatherproof kiosk, as specified	R	

ITEM CATEGORY C: OUTDOOR BULK METERING UNITS

Item No.	Description	Unit price delivered and Off-loaded (All Applicable Taxes Included) (R)	Tendered Delivery Period from date of Official Purchase Order (Weeks)
Individually appointed (Per Item)			
C1	Outdoor bulk metering unit (Standard or Compact) with 1 customer outgoing circuit, enclosed within a weatherproof kiosk, as specified	R	
C2	Compact outdoor bulk metering unit with 2 customer outgoing circuits, enclosed within a weatherproof kiosk, as specified	R	
C3	Compact outdoor **SSEG bulk metering unit** with 1 customer outgoing circuit, enclosed within a weatherproof kiosk, as specified	R	

ITEM CATEGORY D: ADDITIONAL ITEMS

Item No.	Description	Unit price delivered and Off-loaded (All Applicable Taxes Included) (R)	Tendered Delivery Period from date of Official Purchase Order (Weeks)
Individually appointed (Per Item)			
D1	Universal Phase comparator devices, as specified	R	
Appointed as a cluster (D2 – D6)			
Item No.	**Description**	**Unit price delivered and Off-loaded (All Applicable Taxes Included)**	**Tendered Delivery Period from date of Official Purchase Order (Weeks)**

		(R)	
D2	Spare self-powered protective relay, as specified, and as offered with circuit breaker modules tendered to this specification, each	R	
D3	Spare self-powered protective relay Trip Coil	R	
D4	Spare single-core protection current transformers, as specified, and as offered with circuit breaker modules tendered to this specification, each	R	
D5	Spare dual core protection / metering current transformers, as specified, and as offered with outdoor bulk metering units tendered to this specification, each	R	
D6	Spare single-core metering current transformers, as specified, and as offered with circuit breaker modules tendered to this specification, each	R	
Total Rates for Items D2 – D6 (All Applicable Taxes Included)		**R**	
Individually appointed (Per Item)			
Item No.	**Description**	**Unit price delivered and Off-loaded (All Applicable Taxes Included) (R)**	**Tendered Delivery Period from date of Official Purchase Order (Weeks)**
D7	Spare ABB PR512/P Trip Coil (or equivalent to approval), complete	R	
D8	Spare ABB REJ603 with HMI (Model No REJ603BBB10NN31C) (or equivalent to approval) self- powered protective relay, complete, as specified	R	
D9	Spare ABB REJ603-CT3 (32-112A) (or equivalent to approval) current transformers, each, as specified	R	
D10	Spare ABB REJ603 Trip Coil (or equivalent to approval), complete	R	

D11	Detection, repair and topping up on site of SF6 gas leaks on the OEM's ring main unit, extensible switchgear or outdoor BMU equipment, per equipment Item (single tank), excluding SF6 gas		-
D12	SF6 gas for equipment topping up on site, per kg		-
D13	Recommended Specialized Tools and Equipment (Note Clause 7.4.13.2; Tenderer to itemize below):	-	-

Schedule: Information to be provided with the tender

The following information shall be provided with the Tender:

a. Schedule A – **Schedule of Manufacturer Information**
b. Schedule B – **Schedule of Technical Data**
c. Schedule C – **Schedule of Manufacturer's Experience and Facilities**
d. **Schedule D – Details of Quality System and Manufacturing and After Sales Facilities in South Africa**
e. Schedule E – **Departures from the Requirements of the Specification**
f. With reference to sections 9, 11, 12, 13 & 14 of the Specification (SF_6 Gas Replenishment / Recovery, Drawings and Information training, and Tests and Inspections) the following are to be attached to the tender document as annexures:
    i. Drawings and technical documentation
    ii. Factory/ Manufacturer Quality Plan
    iii. Schedule of Type tests and type test certificate cover sheets
    iv. Full details of training proposal
    v. OEM letter where required
    vi. All other returnable required in terms of Section 9, 11, 12, 13 & 14 of the Specification but not specifically mentioned above.

Schedule A - Schedule of Manufacturer Information

(To be completed by Tenderer)

Item No.	Description	Manufacturer	Place of Manufacture	Place of Testing and Inspection	Model / Type of Equipment
1	Ring Main Units				
2	Recloser Ring Main Units				
3	Extensible Switchgear				
4	Outdoor Bulk Metering Units				
5	SSEG Bulk Metering Units				
6	Weatherproof kiosks				
7	Pedestals / Raising bases				
8	Protection relays				
9	Protection Current Transformers				
10	Metering Current Transformers				
11	Metering Voltage Transformers				
12	Earth fault indication equipment				
13	VDS Equipment				

14	Universal Phase Comparators				

TENDERERS NAME _____ ***SIGNATURE*** _____

Schedule B - Schedule of Technical Data

	DESCRIPTION	EQUIPMENT REQUIRED	EQUIPMENT OFFERED		
			Ring Main Units (Incl Recloser RMU)	Extensible Switchgear	O/D Bulk & SSEG Metering Units
1	**Ring Main Units, Extensible Switchgear and Bulk Metering Units**	-			
1.1	Manufacturer				
1.2	Equipment type and Model (Identifying name)	-			
1.3	Outdoor Bulk Metering Unit configuration for BMU with single customer circuit (Section 4.9.1 / 4.9.2)	Standard / Compact			
1.4	Insulation medium	SF6			
1.5	Switch disconnector interrupting medium	SF6			
1.6	Circuit breaker interrupting medium	SF6/Vacuum			
1.7	Rated voltage	12			
1.8	Highest voltage	13,2			
1.9	Frequency	50			
1.10	Rated short-time withstand current	20 for 3s			
1.11	Rated peaks withstand current	50			
1.12	Rated peak lightning impulse withstand voltage	95			
1.13	Rated short-time power frequency withstand rms voltage	28			
1.14	Internal arc classification of ring main unit and extensible switchgear (indoor)	AFL 20kA for 0,5s			
1.15	Internal arc classification of ring main unit & kiosk (outdoor) and outdoor bulk metering unit	AB 20kA for 0,5s			
1.16	Rated normal current of busbars	630			
1.17	Rated normal current of ring main	630			

	switch disconnector				
1.18	Rated normal current of switch-fuse combination	200			
1.19	Rated normal current of circuit breaker	200			
1.20	Rated short circuit breaking current:				
1.20.1	Switch-Disconnector and Circuit breaker	20			
1.20.2	Switch-fuse combination	20			
1.21	Rated short circuit making current (all modules)	50			

	DESCRIPTION	EQUIPMENT REQUIRED	EQUIPMENT OFFERED		
			Ring Main Units (Incl Recloser RMU)	Extensible Switchgear	O/D Bulk & SSEG Metering Units
1.22	Integral cable earthing switch:				
1.22.1	ring main switch-disconnector	YES	YES/NO*	YES/NO*	YES/NO*
1.22.2	switch-fuse combination	YES	YES/NO*	YES/NO*	YES/NO*
1.22.3	circuit breaker	YES	YES/NO*	YES/NO*	YES/NO*
1.23	Making capacity of ring main switch earthing Switch - kAp	50			
1.24	Making capacity of switch-fuse earthing Switch - kAp	50			
1.25	Switch disconnector Class	E2 M1			
1.26	Circuit breaker Class (all but Recloser RMU)	E2 M1 C2			
1.27	Circuit breaker Class (Recloser RMU)	E2 M2 C2			
1.28	Circuit breaker rated operating sequence (all but Recloser RMU)	O-t-CO-t-CO t = 3 min			
1.29	Circuit breaker rated operating sequence (Recloser RMU)	O-t1-CO-t2-CO t1 = 0.3 sec t2 = 3 min			
1.30	Circuit breaker First-pole-to-clear factor	1,5			
1.31	Integral cable test facilities:				
1.31.1	ring main switch-disconnector	YES	YES/NO*	YES/NO*	YES/NO*

1.31.2	switch-fuse	Preferred	YES/NO*	YES/NO*	YES/NO*
1.31.3	circuit breaker	YES	YES/NO*	YES/NO*	YES/NO*
1.32	Busbars Arrangements:				
1.32.1	Extensible busbars – Ring main units	NO	YES/NO*		
1.32.2	Extensible busbars – Extensible switchgear	YES		YES/NO*	
1.32.3	Extensible busbars – Outdoor Bulk Metering Units	-			YES/NO*
1.32.4	Type of busbar extensions (Indoor Extensible Switchgear)	Busbar coupling / External busbar			
1.32.5	Type of busbar extensions (Outdoor Standard BMU, if applicable)	Busbar coupling / External busbar			
1.33	Partition class	PM			
1.34	Loss of service continuity category	LSC1			
1.35	Minimum degree of protection **(MV compartments)**	IP 4X			

	DESCRIPTION	**EQUIPMENT REQUIRED**	**EQUIPMENT OFFERED**		
			Ring Main Units (Incl Recloser RMU)	**Extensible Switchgear**	**O/D Bulk & SSEG Metering Units**
1.36	Accessibility of Compartments:				
1.36.1	Gas insulated switch compartment	Non-accessible			
1.36.2	Air insulated fuse compartment	Interlock-controlled			
1.36.3	Air insulated metering compartment – Metering Module	Interlock-controlled			
1.36.4	Air insulated metering compartment – O/D Bulk Metering Unit & SSEG BMU	Tool-based			
1.36.4	Cable compartment	Interlock-controlled			
1.36.5	Cable test facility compartment	Interlock-controlled			

1.37	Fuse links to be supplied with ring main units & extensible sw/gr	NO	YES/NO*	YES/NO*	YES/NO*
1.38	Dimensions of air insulated fuse link carrier:	-			
1.38.1	Fuse Length (min) – mm				
1.38.2	Fuse Length (max) – mm	-			
1.38.3	Fuse Diameter (max) – mm	-			
1.39	Fuse profile	DIN 43625			
1.39.1	Fuse length – mm	442			
1.39.2	Fuse rating (max) – A	125			
1.39.3	Fuse rating (Compact Outdoor BMU, where applicable) – A	-			
1.40	Min specific creepage in fuse carrier (if free breathing) – mm/kV	25			
1.41	Fuse catalogue reference	-			
1.42	Maximum test voltage – kVdc	19			
1.43	Maximum test voltage – kVac	13			
1.44	Units lockable with padlocks with shackle size:				
1.45.1	RMU / Switchgear Controls – mm	5	YES/NO*	YES/NO*	YES/NO*
1.45.2	RMU / Switchgear Weatherproof Cubicle Doors - mm	8	YES/NO*	YES/NO*	YES/NO*

	DESCRIPTION	**EQUIPMENT REQUIRED**	**EQUIPMENT OFFERED**		
			Ring Main Units (Incl Recloser RMU)	**Extensible Switchgear**	**O/D Bulk & SSEG Metering Units**
1.46	Mass of units complete with SF_6 and operating mechanism	-			
1.46.1	Indoor RMU; 3-way - kg				
1.46.2	Indoor RMU; 4-way - kg	-			
1.46.3	Indoor extensible switchgear; dual module - kg	-			
1.46.4	Indoor extensible switchgear; single module - kg	-			

1.46.5	Indoor extensible switchgear; metering module - kg	-			
1.46.6	Outdoor RMU; 3-way, complete with kiosk - kg	-			
1.46.7	Outdoor RMU; 4-way, complete with kiosk - kg	-			
1.46.8	Outdoor RMU; 5-way, complete with kiosk - kg	-			
1.46.9	Outdoor Recloser RMU; 3-way, complete with kiosk - kg				
1.46.10	Outdoor Bulk Metering Unit: 1 customer circuit - kg	-			
1.46.11	Outdoor Bulk Metering Unit; 2 customer circuits - kg				
1.46.12	Outdoor SSEG Bulk Metering Unit; 1 customer circuit - kg	-			
1.47	Volume of SF6 in complete unit				
1.47.1	Indoor RMU; 3-way - ℓ	-			
1.47.2	Indoor RMU; 4-way - ℓ	-			
1.47.3	Indoor extensible switchgear; dual module - ℓ	-			
1.47.4	Indoor extensible switchgear; single module - ℓ	-			
1.47.5	Indoor extensible switchgear; metering module	-			
1.47.6	Outdoor RMU; 3-way, complete with kiosk - ℓ	-			
1.47.7	Outdoor RMU; 4-way, complete with kiosk - ℓ	-			
1.47.8	Outdoor RMU; 5-way, complete with kiosk - ℓ	-			
1.47.9	Outdoor Recloser RMU; 3-way, complete with kiosk - ℓ				
1.47.10	Outdoor Bulk Metering Unit; 1 customer circuit - ℓ				
1.47.11	Outdoor Bulk Metering Unit; 2 customer circuits				
1.47.12	Outdoor SSEG Bulk Metering Unit; 1 customer circuit - ℓ	-			

1.48	Lifting facilities provided	YES	YES/NO*	YES/NO*	YES/NO*

	DESCRIPTION	EQUIPMENT REQUIRED	EQUIPMENT OFFERED		
			Ring Main Units (Incl Recloser RMU)	Extensible Switchgear	O/D Bulk & SSEG Metering Units
1.49	Dimensions of cable boxes:				
1.49.1	Height - mm	-			
1.49.2	Depth - mm	-			
1.49.3	Width - mm	-			
1.50	Distance between cable support clamp and cable bushing centers (switch disconnector and switch fuse combination)	800			
1.51	Distance between cable support clamp and cable bushing centers (circuit breaker with OC current transformers)	800			
1.52	Distance between cable support clamp and cable bushing centers (circuit breaker with OC and metering current transformers)	-			
1.53	Cable support clamps suitable for 3-core 35 mm^2 - 120 mm^2 PILC DSTA cable	YES	YES/NO*	YES/NO*	YES/NO*
1.54	Distance between cable bushing centers	SANS 876			
1.55	Distance from cable bushing connection to nearest earthed metal - mm	SANS 876			
1.56	Cable Box Gland Plate (Indoor Units)				
1.56.1	Gland plate provided	YES	YES/NO*	YES/NO*	
1.56.2	Gland plate IAC type tested	YES	YES/NO*	YES/NO*	
1.56.3	Gland plate suitable for assembly around installed cable	YES	YES/NO*	YES/NO*	
1.56.4	Gland plate split	YES	YES/NO*	YES/NO*	
1.56.5	Means of provision of seal between gland plate and cable	Range taking grommet			
1.57	Switchgear material details:				
1.57.1	Type of material: Main Switch Tank	-			
1.57.2	Material thickness: Main Switch Tank	-			
1.57.3	Type of material: Sheet Steel Work	-			

1.57.4	Material thickness: Sheet Steel Work	-			
1.57.5	Corrosion protection method: Sheet Steel Work	-			
1.57.6	Type of material: Pedestal / Raising Base (Indoor)	-			
1.57.7	Material thickness: Pedestal / Raising Base	-			
1.57.8	Overall height: Pedestal / Raising Base	-			
1.58	Transit and storage bushing covers provided	YES	YES/NO*	YES/NO*	YES/NO*

	DESCRIPTION	EQUIPMENT REQUIRED	EQUIPMENT OFFERED		
			Ring Main Units (Incl Recloser RMU)	Extensible Switchgear	O/D Bulk & SSEG Metering Units
2.	**Protective Relays (Self Powered Relays for Circuit Breaker Modules other than Recloser RMUs and SSEG BMUs)**				
2.1	Relay Make and Model	-			
2.2	Relay overcurrent characteristics	DT, NI, VI, EI			
2.3	Relay earth fault characteristics	DT, NI, VI, EI			
2.4	Current transformer relays: Overcurrent setting range	20 – 140% In, 2.5% steps			
2.5	Current transformer relays: Earth fault setting range	10 – 100% In, 2.5% steps			
2.6	IDMTL Time multiplier settings	Min 0,05, 0,01 steps			
2.7	DT Time settings	Inst, 0,04 s – 1s, 0,05 s steps			
2.8	Minimum Primary Current for full relay functionality	-			
2.9	Relay “Wake-Up” time, CB closed onto fault	-			
2.10	Total time to trip: CB closed on fault (relay not “awake”), at settings:	-			
2.10.1	IDMT, NI Curve, 2 x In, 0,1 time multiplier				
2.10.2	DT, 10 x In, Instantaneous	-			
2.11	Total time to trip: fault while on load (relay “awake”), at settings:	-			
2.11.1	IDMT, NI Curve, 2 x In, 0,1 time multiplier				
2.11.2	DT, 10 x In, Instantaneous	-			
2.12	Trip indication	LED / HMI; pickup, I>/I>> trip per phase, Io>/ Io >> trip			
2.13	Trip indication manually resettable off-load	YES	YES/NO*	YES/NO*	YES/NO*
2.14	Protection relay fitted with electronic HMI	YES	YES/NO*	YES/NO*	YES/NO*

2.15	Load current indication per phase	YES	YES/NO*	YES/NO*	YES/NO*
2.16	Event and fault history record buffer	YES	YES/NO*	YES/NO*	YES/NO*
2.17	Number of fault events / disturbances recorded	2 (minimum)			
2.18	HMI back-up battery type (where applicable)	-			
2.19	HMI back-up battery minimum service life	10			
2.20	HMI minimum normal functionality duration (no CT / off-load / fault) h	72			

	DESCRIPTION	**EQUIPMENT REQUIRED**	**EQUIPMENT OFFERED**		
			Ring Main Units (Incl Recloser RMU)	**Extensible Switchgear**	**O/D Bulk & SSEG Metering Units**
2.21	Standard protection relay IP rating, as installed	IP54			
3	**Protection Current Transformers**				
3.1	Means of current measurement	CTs			
3.2	CT Make and designation	-			
3.3	CT fully compliant to SANS / IEC 61869-2	YES	YES/NO*	YES/NO*	YES/NO*
3.4	CT Mounting Position	Bushing / Cable Tail			
3.5	CT Ratio	200/1			
3.6	CT Class and accuracy limit factor	5P10			
3.7	CT Rated burden	2,5			
3.8	CT Short time current rating	20			
4	**Metering Current Transformers**				
4.1	Ratio	200/100/1			
4.2	Rated burden	10			
4.3	Class	0.5S			
4.4	Instrument Security Factor	FS 10			
4.5	Short-time thermal current withstand (Ith)	20			
4.6	Metering CT secondary wiring size	4			
4.7	Metering CT type – Extensible switchgear metering module	Block / Ring-core CTs			

4.8	Metering CT type – Standard Outdoor bulk metering unit (Where applicable)	Block / Ring-core CTs			
4.9	Metering CT type – Compact Outdoor bulk metering unit (Where applicable)	Ring-core CTs			
4.10	Dual-core Metering / Protection CTs (Standard bulk metering unit)? (Where applicable)	-			YES/NO*
4.11	Dual-core Metering / Protection CTs (Compact bulk metering unit)? (Where applicable)	-			YES/NO*
5	**Metering Voltage Transformers**				
5.1	Ratio	$\frac{11000}{\sqrt{3}} / \frac{110}{\sqrt{3}}$			
5.2	Rated burden	25			
5.3	Accuracy Class	0.5			

	DESCRIPTION	**EQUIPMENT REQUIRED**	**EQUIPMENT OFFERED**		
			Ring Main Units (Incl Recloser RMU)	**Extensible Switchgear**	**O/D Bulk & SSEG Metering Units**
5.4	Accuracy range	SANS 61869-3			
5.5	Voltage factor continuous - 30 s	1,2 1,9			
5.6	Short-circuit withstand capability (1 s) - kA	SANS 61869-3			
5.7	VT Tertiary (Residual) winding provided	Yes		YES/NO*	YES/NO*
5.8	VT protective circuitry (Protector) provided	Yes		YES/NO*	YES/NO*
5.9	VT MV fuse rating - A	-			
5.10	VT MV fuse make & type	-			
6	**Earth Fault Indicators**				
6.1	Earth fault indicator Make	-			
6.2	Earth fault indicator Type and Model	-			
6.3	Earth Fault Indicator Sensitivity - A	25<Ie<50			
6.4	Earth fault indicator resetting	Automatic and Manual			
6.5	Automatic resetting time delay - hr	8			

6.6	Earth fault indicator power source	Battery			
6.7	Earth fault indicator battery life - yrs	-			
6.8	Remote indicator provided on kiosk for outdoor equipment	YES	YES/NO*		YES/NO*
7	**Cable Live Indication & Electrical Phasing Facilities**				
7.1	Equipment make	-			
7.2	Equipment model / type	-			
7.3	Equipment VDS compliant in accordance with SANS 61243-5	YES	YES/NO*	YES/NO*	YES/NO*
7.4	Permanent 3 phase facilities	YES	YES/NO*	YES/NO*	YES/NO*
8	**Phase Comparators**				
8.1	Equipment make	-			
8.2	Equipment model / type	-			
8.3	Universal Phase Comparators in accordance with SANS 61243-5	YES	YES/NO*	YES/NO*	YES/NO*

	DESCRIPTION	**EQUIPMENT REQUIRED**	**EQUIPMENT OFFERED**		
			Ring Main Units (Incl Recloser RMU)	**Extensible Switchgear**	**O/D Bulk & SSEG Metering Units**
9	**IED Protective Relay Compartment (Outdoor Recloser RMUs & SSEG BMUs)**				
9.1	IED Protective Relay provision - position	RMU LV/Mech Compartment / RMU Top Unit			
9.2	IED Protective Relay minimum clear space envelope - mm	200(h)x150(w) x160(d) (Plus 30(d) in front of fascia)	YES/NO*		YES/NO*
9.3	IED Protective Relay cut-out (in RMU fascia) - mm	187(h)x139(w)	YES/NO*		YES/NO*
9.4	IED Protective Relay – Provision for flush mounting	YES	YES/NO*		YES/NO*
9.5	IED Relay Mounting Height, from bottom	<1800	YES/NO		YES/NO*

	of base frame - mm		*		
10 10.1	**SCADA Compartment (Outdoor Recloser RMUs & SSEG BMUs)** SCADA Compartment position	Dedicated external compt / RMU Top Unit			
10.2	External SCADA Compartment (where applicable) Backing Board size and minimum clear internal dimensions above - mm	800(h)x600(w) x250(d)			
10.3	Remote Terminal Unit minimum clear space envelope - mm	220(h)x260(w) x50(d)	YES/NO *		YES/NO*
10.4	DC – DC Convertor minimum clear space envelope - mm	200(h)x150(w) x150(d)	YES/NO *		YES/NO*
10.5	Radio Communications Unit minimum clear space envelope - mm	190(h)x130(w) x100(d)	YES/NO *		YES/NO*
10.6	Ethernet Switch minimum clear space envelope - mm	140(h)x150(w) x50(d)	YES/NO *		YES/NO*
10.7	Power Supply Unit minimum clear space envelope - mm	120(h)x70(w) x150(d)	YES/NO *		YES/NO*
10.8	Battery minimum clear space envelope (bottom mounted) - mm	200(h)x300(w) x180(d)	YES/NO *		YES/NO*
10.9	RMU Top Unit suitably sized for all specified SCADA equipment, accessories, terminal strips and trunking	YES	YES/NO *		YES/NO*
10.10	RMU Top Unit clear Internal Dimensions (excl IED Relay, if applicable) - mm	To suit individual, equip & Accessories			
	NOTE: Dimensions above are with reference to backing board (ie depth (d) is clear distance above backing board when mounted				
10.11	Minimum degree of protection – SCADA Compartment	IP 44			

	DESCRIPTION	EQUIPMENT REQUIRED	EQUIPMENT OFFERED		
			Ring Main Units (Incl Recloser RMU)	Extensible Switchgear	O/D Bulk & SSEG Metering Units
11	**LV Metering Compartment (Outdoor BMU & SSEG BMU)**				
11.1	LV metering Compartment position	External compartment accessible from RHS of weatherproof kiosk			
11.2	LV Metering Compartment clear internal depth (measured between backing board and inner extent of locking mech, locking mech rods and flanges, hinges or other hardware mounted on the metering compartment doors) - mm	200(d)			
11.3	LV Metering Compartment backing board size:				
11.3.1	Single feeder OBMU - mm	550(h)x300(w)			
11.3.2	Two feeders compact OBMU - mm	550(h)x600(w)			
11.4	LV Metering Compartment equipment backing board material	20mm Blockboard or equivalent			
11.5	Minimum degree of protection – LV Metering Compartment	IP 44			
12	**Wiring and Terminal Strips (Outdoor Recloser RMUs & SSEG BMUs)**				
12.1	Wiring, trunking, cable clamps and Terminal Strips for RMU modules, marshalling, IED Relay, Incoming Mains Cable, AC Mains, DC Auxiliary power, and 61850 Communications Fibre conduit provided as specified.	YES	YES/NO*		YES/NO*

* Delete whichever is not applicable.

TENDERERS NAME_____SIGNATURE_____

Schedule B: Schedule of Technical Data (Cont'd)			
	DESCRIPTION	**EQUIPMENT REQUIRED**	**EQUIPMENT OFFERED**
9	**Weatherproof Kiosks**		
9.1	Material type	3CR12	
9.2	Material thickness mm	-	
9.3	Overall Dimensions - RMU Kiosks:		
9.3.1	Height mm	-	
9.3.2	Depth (front to back) mm	-	
9.3.3	Width (3-Way kiosk) mm	-	
9.3.4	Width (4-Way kiosk) mm	-	
9.3.5	Width (5-Way kiosk) mm	-	
9.3	Overall Dimensions – Outdoor Bulk Metering Unit Kiosks:	-	
9.3.1	Height mm		
9.3.2	Depth (front to back) mm	-	
9.3.3	Width (BMUs with single customer circuit) mm	-	
9.3.4	Width (BMUs with two customer circuits) mm	-	
9.4	Weatherproof Kiosk base frame fully compatible with dimensions and MV cable cut-out of specified concrete plinths?	YES	YES/NO*
9.4.1	3-Way outdoor RMU		
9.4.2	4-Way outdoor RMU	YES	YES/NO*
9.4.3	5-Way outdoor RMU	YES	YES/NO*
9.4.4	3-Way outdoor Recloser RMU	YES	YES/NO*
9.4.5	Outdoor Bulk Metering Unit (Standard) – 1 Customer circuit (where offered)	YES	YES/NO*
9.4.6	Outdoor Bulk Metering Unit (Compact) – 1 Customer circuit (where offered)	YES	YES/NO*
9.4.7	Outdoor Bulk Metering Unit (Compact) – 2 Customer circuits	YES	YES/NO*
9.4.8	Outdoor SSEG Bulk Metering Unit (Compact)	YES	YES/NO*
9.5	Lifting facilities provided?	YES	YES/NO*
9.6	Minimum degree of protection – weatherproof	IP 44	

	kiosk		
9.7	Recessed doors on Weatherproof Kiosks fully in accordance with specified requirements?	YES	YES/NO*
9.8	Three-point locking mechanism on kiosk doors	YES	
9.9	Corrosion protection method	Epoxy powder coating 50 µm Avocado C12	
10	**Equipment Supporting Documentation**		
10.1	Type Test Schedule (Detailing all completed type tests, per tender item) Included with Tender, as specified	YES	YES/NO*
10.2	Copies of cover sheets, results summaries and tested equipment details included for all type tests, as specified	YES	YES/NO*
10.3	Dimensioned GA, Section and Detail Drawings included as specified	YES	YES/NO*
10.4	Installation instructions and IAC installation requirements included, as specified	YES	YES/NO*
11	**Manufacturer's guarantee -** months	12	

* Delete whichever is not applicable.

TENDERERS NAME_____SIGNATURE_____

Schedule C: Schedule of Manufacturer's Experience and Facilities

The tenderer shall insert in the spaces provided below a list of completed contracts for equivalent ring main units, extensible switchgear and / or outdoor bulk metering units awarded to the manufacturer and those currently being undertaken.

EMPLOYER (NAME, TEL No. AND FAX No.)	CONSULTING ENGINEER (NAME, TEL No. AND FAX No.)	DESCRIPTION OF EQUIPMENT SUPPLIED	VALUE OF WORK R(m)	COMPLETION DATE
COMPLETED CONTRACTS				
CURRENT CONTRACTS				

Manufacturing Facilities:

Address of Factory

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

.....
.....

Factory total floor area (m^2)
……
……

Current Factory Monthly RMU, Switchgear & BMU Manufacturing Capacity (units)
……

Planned Factory Monthly Manufacturing Capacity for this Contract (units)
……

Number of sheets, appended by the Tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER: . . . . . .

Schedule D: DETAILS OF MANUFACTURER'S/TENDERER'S EXPERIENCE, QUALITY SYSTEM AND AFTER SALES FACILITIES IN SOUTH AFRICA

(To be completed by Tenderer)

1	Manufacturer's or Agent's name	
2	Address	
3	Telephone Number and Area Code	
4	Telefax Number and Area Code	
5	Years established	
6	Number of permanent resident technicians	
7	If repair or workshop facilities exist	
8	If spare parts are available in Republic	
9	State whether QA system has been approved in terms of SANS 9001 If yes, state registration No.	
10	Other relevant details	

SIGNED ON BEHALF OF TENDERER: . . . . . .

Schedule E: Departures from the Requirements of the Specification (To be completed by Tenderer)

Clause	Departures from the requirements of this Specification with details of alternative proposals

PAST EXPERIENCE

This schedule is compulsory to complete!

Bidders must furnish hereunder details of similar works / services, which they have satisfactorily completed in the past. The information shall include a description of the Works / Services, the Contract value and name of Employer.

Employer	Nature of Work	Value of Work	Duration and Completion Date	Employer Contact Number

_____ _____

Date Signature of Tenderer

THE TENDER OFFER

I/We Mr/Mrs/Messrs _____
duly assigned to represent the service provider for the purpose of this tender, hereby tender to supply all or any of the goods and/or render all or any of the services described in the attached documents to the George Municipality on terms and conditions stipulated in this tender and in accordance with the specifications stipulated in the tender documents (which shall be taken as part of, and incorporated into this tender) **at the rates reflected in the Pricing Schedule.**

I/we agree that this offer shall remain valid for a period of 120 days commencing from the closing date and time of this tender.

I/we further agree that:

This tender and its acceptance shall be subject to the terms and conditions contained in the George Municipality's Supply Chain Management Policy;

If I/we withdraw my/our tender within the period for which I/we have agreed that the tender shall remain open for acceptance, or fail to fulfill the contract when called upon to do so, the George Municipality may, without prejudice to its other rights, agree to the withdrawal of my/our tender or cancel the contract that may have been entered into between me/us and the George Municipality and I/we will then pay to the George Municipality any additional expense incurred by the George Municipality having either to accept any less favorable tender or, if fresh tenders have to be invited, the additional expenditure incurred by the invitation by the invitation of fresh tenders and by the subsequent acceptance of any less favorable tender; the George Municipality shall also have the right to recover such additional expenditure by set-off against moneys which may be due or become due to me/us under this or any other tender or contract or against any guarantee or deposit that may have been furnished by me/us or on my/our behalf for the due fulfillment of this or any other tender or contract and pending the ascertainment of the amount of such additional expenditure or retain such moneys, guarantee or deposit as security for any loss the George Municipality may sustain by reason of my/our default;

If my/our tender is accepted the acceptance may be communicated to me/us by letter or order by certified mail or registered mail. Such posting shall be deemed to be proper service of such notice with effect from the date of posting/dispatch of such notice;

The law of the Republic of South Africa shall govern the contract created by the acceptance of my/our tender and that I/we choose domicilium citandi et executandi in the Republic of South Africa, where any and all legal notices may be served at (full street address on this place):

Physical Address: _____

_____

_____

_____

I/we furthermore confirm that I/we have satisfied myself/ourselves as to the correctness and validity of my/our tender; that the price(s) and rate(s) tendered cover all the work/item(s) specified in the tender documents and that the price(s) and rate(s) cover all my/our obligations under a resulting contract and that I/we accept that any mistakes regarding price(s) and calculations will be at my/our own risk.

I/we hereby accept full responsibility for the proper execution and fulfillment of all obligations and conditions devolving on me/us under this agreement as the Principal(s) liable for the due fulfillment of this contract.

I/we agree that any action arising from this contract may in all respects be instituted against me/us and I/we hereby undertake to satisfy fully any sentence or judgement which may be pronounced against me/us as a result of such action.

I/we declare that I/we have participation / no participation in the submission of any other offer for the supplies/services described in the attached documents. If in the affirmative, state name(s) of tenders involved.

Name: _____

Signature: _____

Date: _____

This form must be completed and signed to be considered provisionally responsive.

ACCEPTANCE

By signing this part of the form of offer and acceptance, the employer identified below accepts the supplier's offer. In consideration thereof, the employer shall pay the supplier the amount due in accordance with the conditions identified in the tender data. Acceptance of the supplier's offer shall form an agreement between the employer and the supplier upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the supplier receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the supplier within five working days of the date of such receipt notifies the employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

Name: **MR MICHAEL J RHODE**

Signature: _____

Capacity: **DIRECTOR: ELECTRICAL ENGINEERING SERVICES**

Date: _____

For the Employer: **GEORGE MUNICIPALITY**
CIVIC CENTRE
YORK STREET
GEORGE

MBD 1

TAX COMPLIANCE INFORMATION

PART A

Tax Compliance Status	TCS Pin:		**or**	CSD No:	
B-BBEE Status Level Verification Certificate [Tick Applicable Box]	☐ Yes ☐ No		B-BBEE Status Level Sworn Affidavit	☐ Yes ☐ No	
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE / SWORN AFFIDAVIT (FORM EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]					
Are You The Accredited Representative **In South Africa For The Goods / Services / Works Offered?**	☐ Yes ☐ No [If Yes, Enclose Proof]		Are You A Foreign Based Supplier For **The Goods / Services / Works Offered?**	☐ Yes ☐ No [If Yes, Answer Part 2.]	
Signature of Bidder	……..…		Date	……..	

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 VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.

1.3 APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.

1.4 FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B2.

1.5 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.

1.6 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED; EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.

1.7 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL CUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.

2. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS [Tick Applicable Box]

2.1 Is the entity a resident of the Republic of South Africa (RSA)?	YES	NO
2.2 Does the entity have a branch in the RSA?	YES	NO
2.3 Does the entity have a permanent establishment in the RSA?	YES	NO
2.4 Does the entity have any source of income in the RSA?	YES	NO
2.5 Is the entity liable in the RSA for any form of taxation?	YES	NO

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 ABOVE.

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID. NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE.

Signature of Bidder: ……..

Capacity Under Which This Bid Is Signed: ……..

Date: ……

MBD 4

DECLARATION OF INTEREST

1.	No bid will be accepted from persons in the service of the state*.	
2.	Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in the service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority.	
3.	In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.	
3.1	Full Name of bidder or his / her representative: ……..	
3.2	Identity number: ……	
3.3	Position occupied in the Company (director, trustee, shareholder[2]): ……..	
3.4	Company Registration Number: …….	
3.5	Tax Reference Number: ……..	
3.6	VAT Registration Number: …….	
3.7	The names of all directors / trustees / shareholders / members, their individual identity numbers and state employee numbers (where applicable) must be indicated in paragraph 4 below.	
3.8	Are you presently in the service of the state?*	**YES / NO**
3.8.1	If yes, furnish the following particulars: Name of person / director / trustee / shareholder member: …….. Name of state institution at which you or the person connected to the bidder is employed: …….. Position occupied in the state institution: …….. Any other particulars: ……. ……..	

3.9 3.9.1	Have you been in the service of the state for the past twelve months? If so, furnish particulars. …….. ……..	**YES / NO**
3.10 3.10.1	Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid? If yes, furnish the following particulars: Name of person: ……. Name of state institution at which you or the person connected to the bidder is employed: …….. Position occupied in the state institution: …….. Any other particulars: ……. ……..	**YES / NO**
3.11 3.11.1	Are you aware of any relationship (family, friend, other) between the bidder and any person in the service of the state who may be involved with the evaluation and or adjudication of this bid? If yes, furnish the following particulars: Name of person: ……. Name of state institution at which you or the person connected to the bidder is employed: …….. Position occupied in the state institution: …… Any other particulars: ……. …….....	**YES / NO**
3.12 3.12.1	Are any of the company's directors, managers, principal shareholders or stakeholders in the service of the state? If yes, furnish the following particulars:	**YES / NO**

	Name of person / director / trustee / shareholder / member: …… Name of state institution at which you or the person connected to the bidder is employed: …….. Position occupied in the state institution: …… Any other particulars: …… ……..……..	
3.13 3.13.1	Is any spouse, child or parent of the company's directors, trustees, managers, principle shareholders or stakeholders in the service of the state? If yes, furnish the following particulars: Name of person / director / trustee / shareholder / member: …… Name of state institution at which you or the person connected to the bidder is employed: …….. Position occupied in the state institution: …… Any other particulars: …… ……..	**YES / NO**
3.14 3.14.1	Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract? If yes, furnish particulars: …….. ……..	**YES / NO**

4. Full details of directors / trustees / members / shareholders:

THE FOLLOWING INFORMATION IS COMPULSORY TO COMPLETE:

Full Name	Identity Number	Individual Tax Number for each Director	State Employee Number (where applicable)

5.	**The contract will be automatically cancelled if there is a conflict of interest which is not disclosed by the bidder.**

Protection of Personal Information Act, 2013 (Act no.4 of 2013) (POPIA)

All parties agree that they will comply with Protection of Personal Information Act, 2013 (Act no.4 of 2013) (POPIA) and process all the information and/or personal data in respect of the goods and/or services being rendered in accordance with the said act and only for the purpose of providing the goods and/or services set out in the agreement to provide such goods and/or services.

The contract between the municipality and the service provider must ensure compliance with the Protection of Personal Information Act, 2013 (Act no.4 of 2013) (POPIA), in that the service provider establishes and maintains security measures to safeguard personal information being processed on behalf of the municipality. The service provider must notify the municipality immediately in an event where there are reasonable grounds to believe personal information has been accessed by an unauthorised person.

The contract with a service provider must ensure confidentiality of personal information processed on behalf of the municipality. A supply contract with a service provider must include standard clauses outlining joint responsibility in terms of the protection of personal information.

…….. ……..
Signature Date

…… ……
Capacity Name of Bidder

[1]MSCM Regulations: "in the service of the state" means to be -

(a) a member of –
  (i) any municipal council;
  (ii) any provincial legislature; or
  (iii) the National Assembly or the National Council of Provinces;
(b) a member of the board of directors of any municipal entity;
(c) an official or any Municipality or municipal entity;
(d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);
(e) a member of the accounting authority of any national or provincial entity; or
(f) an employee of Parliament or a provincial legislature.

[2]"Shareholder" means a person who owns shares in the company and is actively involved in the management of the company or business and exercise control over the company.

MBD 5

DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED)

For all procurement expected to exceed R10 million (all applicable taxes included), bidders must complete the following questionnaire:

1	Are you by law required to prepare annual financial statements for auditing?	***YES / NO**
1.1	If yes, submit audited annual financial statements for the past three years or since the date of establishment if established during the past three years.	
	……..…….	
	……	
2.	Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days?	***YES / NO**
2.1	If no, this serves to certify that the bidder has no undisputed commitments for municipal services toward any municipality for more than three months or other service provider in respect of which payment is overdue for more than 30 days.	
2.2	If yes, provide particulars.	
	……..…….	
	……	
	……..…….	
	……	
3	Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non- compliance or dispute concerning the execution of such contract?	***YES / NO**
3.1	If yes, provide particulars.	
	……..…….	
	……	

……..…….

……

4 Will any portion of goods or services be sourced from outside* **YES / NO**
the Republic, and, if so, what portion and whether any portion
of payment from the municipality / municipal entity is expected
to be transferred out of the Republic?

4.1 If yes, furnish particulars.

……..…….

……

……..…….

……

CERTIFICATION

I, THE UNDERSIGNED (NAME) ……..……

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT. I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

……..	……..……..
Signature	Date
……	…….
Position	Name of Bidder

MBD 6.1

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

---

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

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

1.2 To be completed by the organ of state

The applicable preference point system for this tender is the 80/20 preference point system.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

(a) Price;
(b) BBBEE; and
(c) Specific Goals.

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	80
BBBEE	10
SPECIFIC GOALS	10
Total points for PRICE and SPECIFIC GOALS	**100**

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

1.6 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim regarding preferences, in any manner required by the organ of state.

2. DEFINITIONS

(a) **"tender"** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;

(b) **"price"** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;

(c) **"rand value"** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

(d) **"tender for income-generating contracts"** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and

(e) **"the Act"** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 **or** **90/10**

$$Ps = 80\left(1 - \frac{Pt - P\,min}{P\,min}\right) \text{ or } \quad Ps = 90\left(1 - \frac{Pt - P\,min}{P\,min}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. POINTS AWARDED FOR PRICE

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 **or** **90/10**

$$Ps = 80\left(1 + \frac{Pt - P\,max}{P\,max}\right) \quad \text{or} \quad Ps = 90\left(1 + \frac{Pt - P\,max}{Pmax}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR BBBEE AND SPECIFIC GOALS

4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

4.1.1 Points awarded for B-BBEE Level of Contributor

In terms of the Specific Goals as per the George Municipality Preferential Procurement Policy, preference points must be awarded to a tenderer for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of Points for Preference (80/20)	Number of Points for Preference (90/10)
1	10	5
2	9	4.5
3	7	3
4	6	2.5
5	4	2
6	3	1.5
7	2	1
8	1	0.5
Non-compliant contributor	0	0

Bidder MUST submit a valid BBBEE certificate, failure to attach no points will be awarded for BBBEE points.

4.1.2 Points awarded for Specific Goals

In terms of the Specific Goals as per the George Municipality Preferential Procurement Policy, preference points must be awarded to a Tenderer for Locality in accordance with the table below:

Locality of Tenderer's Office	Number of points (80/20 system)	Number of points (90/10 system)
Within the boundaries of George Municipality	10	5
Within the boundaries of the Garden Route District Municipality	6	3
Within the borders of the Western Cape	4	2

Outside the borders of the Western Cape	2	1

Bidder's MUST submit proof of address (e. g. municipal account, rental/lease agreement, or affidavit) with the tender document. Failure to attach proof will result in no points awarded for Specific Goals.

George Municipality will reserve the right to use any and all available information at its disposal, including conducting site visits and inspections to verify a bidder's claim of having a local STAFFED / MANNED AND OPERATIONAL office within the George Municipal area.

The principle of substance over legal form, as defined in the Standards of Generally Recognised Accounting Practice (GRAP), will be applied in such assessments. (This means that even though a bidder may present a rental agreement, the claim of having a local staffed and operational office will be assessed in its actual substance and not by only accepting the legal documentation.)

The purpose of the locality points is to promote local economic development within the George Municipal area and any bidder attempting to circumvent the substance of this initiative through any means, including by means of fronting, will be reported to the National Treasury for blacklisting on the Central Supplier Database (CSD).

4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

5. BID DECLARATION

Tenderers who claim points in respect of BBBEE must complete the following:

B-BBEE STATUS LEVEL OF CONTRIBUTOR CLAIMED IN TERMS OF PARAGRAPHS 4.1 AND 4.1.1

5.1.	**Contribution to BBBEE: ..... = ...……(maximum of 5 or 10 points)**

(Points claimed in respect of paragraph 5.1 must be in accordance with the table reflected in paragraph 4.1.1 and **must be substantiated by relevant proof of B-BBEE status level of contributor.**)

LOCALITY OF TENDERERS OFFICE CLAIMED IN TERMS OF PARAGRAPHS 4.1 AND 4.1.2

5.2.	**Contribution to specific Goals: ..... = ...……(maximum of 5 or 10 points)**

(Points claimed in respect of paragraph 5.2 must be in accordance with the table reflected in paragraph 4.1.2 and **must be substantiated by relevant proof of address of a company office.)**

DECLARATION WITH REGARD TO COMPANY/FIRM

5.3. Name of company/firm…….

5.4. Company registration number: ……...

5.5. TYPE OF COMPANY/ FIRM

- □ Partnership/Joint Venture / Consortium
- □ One-person business/sole propriety
- □ Close corporation
- □ Public Company
- □ Personal Liability Company
- □ (Pty) Limited
- □ Non-Profit Company
- □ State Owned Company

[TICK APPLICABLE BOX]

5.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I 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 paragraphs 5.1 and 5.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;
iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –
   (a) disqualify the person from the tendering 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) recommend that the tenderer or contractor, its shareholders, and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted 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

(e) forward the matter for criminal prosecution, if deemed necessary.

…… SIGNATURE(S) OF TENDERER(S)
SURNAME AND NAME: ……
DATE: ……
ADDRESS: ……

MBD 6.1(a)

SWORN AFFIDAVIT – BBBEE EXEMPTED MICRO ENTERPRISE

SWORN AFFIDAVIT – B-BBEE EXEMPTED MICRO ENTERPRISE

I, the undersigned,

Full name & Surname	
Identity number	

Hereby declare under oath as follows:

1. The contents of this statement are to the best of my knowledge a true reflection of the facts.

2. I am a member / director / owner of the following enterprise and am duly authorised to act on its behalf:

Enterprise Name	
Trading Name	
Registration Number	
Enterprise Address	

3. I hereby declare under oath that:

- The enterprise is _____% black owned;
- The enterprise is _____% black woman owned;
- Based on the management accounts and other information available on the _____ financial year, the income did not exceed R10,000,000.00 (ten million rands);
- Please confirm on the table below the B-BBEE level contributor, **by ticking the applicable box.**

100% black owned	**Level One** (135% B-BBEE procurement recognition)	
More than 51% black owned	**Level Two** (125% B-BBEE procurement recognition)	
Less than 51% black owned	**Level Four** (100% B-BBEE procurement recognition)	

4. The entity is an empowering supplier in terms of **the dti** Codes of Good Practice.

5. I know and understand the contents of this affidavit and I have no objection to take the prescribed oath and consider the oath binding on my conscience and on the owners of the enterprise which I represent in this matter.

6. The sworn affidavit will be valid for a period of 12 months from the date signed by commissioner.

Deponent Signature: _____

Date: _____

_____

Commissioner of Oaths
Signature & stamp

MBD8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

1 This Municipal Bidding Document must form part of all bids invited.

2 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.

3 The bid of any bidder may be rejected if that bidder, or any of its directors have:

a. abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
b. been convicted for fraud or corruption during the past five years;
c. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
d. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).

4 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's database as a company or person prohibited from doing business with the public sector? (Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the *audi alteram partem* rule was applied). **The Database of Restricted Suppliers now resides on the National Treasury's webiste (www.treasury.gov.za) and can be accessed by clicking on its link at the bottom of the home page.**	Yes ☐	No ☐
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? **The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.**	Yes ☐	No ☐

4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐
4.3.1	If so, furnish particulars:		
Item	**Question**	**Yes**	**No**
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes ☐	No ☐
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes ☐	No ☐
4.5.1	If so, furnish particulars:		

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME) ……..……

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION

FORM IS TRUE AND CORRECT.

I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

……...	**……..……**
Signature	**Date**
……	**……..…..**
Position	**Name of Bidder**

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

1 This Municipal Bidding Document (MBD) must form part of all bids[1] invited.

2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).[2] Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.

3 Municipal Supply Regulation 38(1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:

a. take all reasonable steps to prevent such abuse;

b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and

c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.

4 This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.

5 In order to give effect to the above, the attached Certificate of Bid Determination (MBD9) must be completed and submitted with the bid:

[1] Includes price quotations, advertised competitive bids, limited bids and proposals.

[2] Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

_____
(Bid Number and Description)

in response to the invitation for the bid made by:

GEORGE MUNICIPALITY

do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of:_____that:
(Name of Bidder)

1. I have read and I understand the contents of this Certificate;

2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;

3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;

4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;

5. For the purposes of this Certificate and the accompanying bid, I understand that the word “competitor” shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:

   (a) has been requested to submit a bid in response to this bid invitation;
   (b) could potentially submit a bid in response to this bid invitation, based on
   their qualifications, abilities or experience; and
   (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder.

MBD9

6. 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[3] will not be construed as collusive bidding.

7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

   (a) prices;
   (b) geographical area where product or service will be rendered (market allocation)
   (c) methods, factors or formulas used to calculate prices;
   (d) the intention or decision to submit or not to submit, a bid;
   (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
   (f) bidding with the intention not to win the bid.

8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.

9. 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.

10. 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.

…… ……
Signature Date

……. ……
Position Name of Bidder

[3] 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.

CERTIFICATE FOR MUNICIPAL SERVICES (COMPULSORY TO COMPLETE)

Information required in terms of the Supply Chain Management Regulations, Regulation 28 (1) (c).

Tender Number: GMT023/25-26

Name of the Bidder: _____

DETAILS OF THE BIDDER/S: Owner / Proprietor / Director(s) / Partner(s), etc:

Physical Business address of the Bidder	Municipal Account Number(s)

If there is not enough space for all the names, please attach the additional details to the Tender document.

Name of Director / Member / Partner	Identity Number	Physical **residential** address of Director / Member / Partner	Municipal Account number(s)

I, _____, the undersigned,

(full name in block letters)

certify that the information furnished on this declaration form is correct and that I/we have no undisputed commitments for municipal services towards a municipality or other service provider in respect of which payment if overdue for more than 30 days.

_____

Signature

THUS DONE AND SIGNED for and on behalf of the Bidder / Contractor

at _____ on the _____ day of _____ 2025

PLEASE NOTE:

MUNICIPAL ACCOUNTS FOR ALL PROPERTIES OWNED BY BIDDER/S MUST BE ATTACHED TO THE TENDER DOCUMENT!

Even if the requested information is not applicable to the Bidder, the table above should be endorsed NOT APPLICABLE with a reason and THIS DECLARATION MUST STILL BE COMPLETED AND SIGNED. In the event of leasing, a lease agreement MUST be attached to the tender document.

GEORGE MUNICIPALITY PROCUREMENT

GENERAL CONDITIONS OF CONTRACT

TABLE OF CLAUSES

General Conditions of Contract

1. Definitions:

1. The following terms shall be interpreted as indicated:

1.1 “Closing time” means the date and hour specified in the bidding documents for the receipt of bids.
1.2 “Contract” means the written agreement entered into between the purchaser and the supplier, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
1.3 “Contract price” means the price payable to the supplier under the contract for the full and proper performance of his contractual obligations.
1.4 “Corrupt practice” means the offering, giving, receiving, or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.
1.5 "Countervailing duties" are imposed in cases where an enterprise abroad is subsidized by its government and encouraged to market its products internationally.
1.6 “Country of origin” means the place where the goods were mined, grown or produced or from which the services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.
1.7 “Day” means calendar day.
1.8 “Delivery” means delivery in compliance of the conditions of the contract or order.
1.9 “Delivery ex stock” means immediate delivery directly from stock actually on hand.
1.10 “Delivery into consignees store or to his site” means delivered and unloaded in the specified store or depot or on the specified site in compliance with the conditions of the contract or order, the supplier bearing all risks and charges involved until the goods are so delivered and a valid receipt is obtained.
1.11 "Dumping" occurs when a private enterprise abroad market its goods on own initiative in the RSA at lower prices than that of the country of origin and which have the potential to harm the local industries in the RSA.
1.12 ”Force majeure” means an event beyond the control of the supplier and not involving the supplier’s fault or negligence and not foreseeable. Such events may include, but is not restricted to, acts of the purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.
1.13 “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any bidder, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the bidder of the benefits of free and open competition.
1.14 “GCC” means the General Conditions of Contract.
1.15 “Goods” means all of the equipment, machinery, and/or other materials that the supplier is required to supply to the purchaser under the contract.
1.16 “Imported content” means that portion of the bidding price represented by the cost of components, parts or materials which have been or are still to be

imported (whether by the supplier or his subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs such as landing costs, dock dues, import duty, sales duty or other similar tax or duty at the South African place of entry as well as transportation and handling charges to the factory in the Republic where the goods covered by the bid will be manufactured.

1.17 "Local content" means that portion of the bidding price which is not included in the imported content provided that local manufacture does take place.

1.18 "Manufacture" means the production of products in a factory using labour, materials, components and machinery and includes other related value-adding activities.

1.19 "Order" means an official written order issued for the supply of goods or works or the rendering of a service.

1.20 "Project site," where applicable, means the place indicated in bidding documents.

1.21 "Purchaser" means the organization purchasing the goods.

1.22 "Republic" means the Republic of South Africa.

1.23 "SCC" means the Special Conditions of Contract.

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

1.25 "Supplier" means the successful bidder who is awarded the contract to maintain and administer the required and specified service(s) to the State.

1.26 "Tort" means in breach of contract.

1.27 "Turnkey" means a procurement process where one service provider assumes total responsibility for all aspects of the project and delivers the full end product / service required by the contract.

1.28 "Written" or "in writing" means hand-written in ink or any form of electronic or mechanical writing.

2. Application:

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

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

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

3. General:

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

3.2 Invitations to bid are usually published in locally distributed news media and on the municipality/municipal entity website.

4. Standards:

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

5. Use of contract documents and information inspection:

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

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

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

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

6. Patent rights:

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

6.2 When a supplier developed documentation / projects for the municipality or municipal entity, the intellectual, copy and patent rights or ownership of such documents or projects will vest in the municipality or municipal entity.

7. Performance security:

7.1 Within thirty (30) days of receipt of the notification of contract award, the successful bidder shall furnish to the purchaser the performance security of the amount specified in SCC.

7.2 The proceeds of the performance security shall be payable to the purchaser as compensation for any loss resulting from the supplier's failure to complete his obligations under the contract.

7.3 The performance security shall be denominated in the currency of the contract, or in a freely convertible currency acceptable to the purchaser and shall be in one of the following forms:

(a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the purchaser's country or abroad, acceptable to the purchaser, in the form provided in the bidding documents or another form acceptable to the purchaser; or

(b) a cashier's or certified cheque.

7.4 The performance security will be discharged by the purchaser and returned to the provider not later than thirty (30) days following the date of completion of the supplier's performance obligations under the contract, including any warranty obligations, unless otherwise specified.

8. Inspections, tests and analyses:

8.1 All pre-bidding testing will be for the account of the bidder.

8.2 If it is a bid condition that goods to be produced or services to be rendered should at any stage be subject to inspections, test and analyses, the bidder or contractor's premises shall be open, at all reasonable hours, for inspection by a representative of the purchaser or an organization acting on behalf of the purchaser.

8.3 If there are no inspection requirements indicated in the bidding documents and no mention is made in the contract, but during the contract period it is decided that inspections shall be carried out, the purchaser shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.

8.4 If the inspections, tests and analyses referred to in clauses 8.2 and 8.3 show the goods to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the purchaser.

8.5 Where the goods or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such goods or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the supplier.

8.6 Goods and services which are referred to in clauses 8.2 and 8.3 and which do not comply with the contract requirements may be rejected.

8.7 Any contract goods may on or after delivery be inspected, tested or analysed and may be rejected if found not to comply with the requirements of the contract. Such rejected goods shall be held at the cost and risk of the supplier who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with goods which do comply with the requirements of the contract. Failing such removal the rejected goods shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute goods forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected goods, purchase such goods as may be necessary at the expense of the supplier.

8.8 The provisions of clauses 8.4 to 8.7 shall not prejudice the right of the purchaser to cancel the contract on account of a breach of the conditions thereof, or to act in terms of Clause 23 of GCC.

9. Packing:

9.1 The supplier shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing, case size and weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.

9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the contract, including additional requirements, if any, and in any subsequent instructions ordered by the purchaser.

10. Delivery and documents:

10.1 Delivery of the goods and arrangements for shipping and clearance obligations shall be made by the supplier in accordance with the terms specified in the contract.

11. Insurance:

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

12. Transportation:

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

13. Incidental services:

13.1 The supplier may be required to provide any or all of the following services, including additional services, if any:

(a) performance or supervision of on-site assembly and/or commissioning of the supplied goods;
(b) furnishing of tools required for assembly and/or maintenance of the supplied goods;
(c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied goods;
(d) performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the supplier of any warranty obligations under this contract; and
(e) training of the purchaser's personnel, at the supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied goods.

13.2 Prices charged by the supplier for incidental services, if not included in the contract price for the goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the provider for similar services.

14. Spare parts:

14.1 As specified, the supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the supplier:

(a) such spare parts as the purchaser may elect to purchase from the supplier, provided that this election shall not relieve the supplier of any warranty obligations under the contract; and
(b) in the event of termination of production of the spare parts:
    (i) advance notification to the purchaser of the pending termination, in sufficient time to permit the purchaser to procure needed requirements; and
    (ii) following such termination, furnishing at no cost to the purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

15. Warranty:

15.1 The supplier warrants that the goods supplied under the contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract. The supplier further warrants that all goods supplied under this

contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the purchaser's specifications) or from any act or omission of the supplier, that may develop under normal use of the supplied goods in the conditions prevailing in the country of final destination.

15.2 This warranty shall remain valid for twelve (12) months after the goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the contract, or for eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise.

15.3 The purchaser shall promptly notify the supplier in writing of any claims arising under this warranty.

15.4 Upon receipt of such notice, the supplier shall, within the period specified and with all reasonable speed, repair or replace the defective goods or parts thereof, without costs to the purchaser.

15.5 If the supplier, having been notified, fails to remedy the defect(s) within the period specified, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expense and without prejudice to any other rights which the purchaser may have against the supplier under the contract.

16. Payment:

16.1 The method and conditions of payment to be made to the supplier under this contract shall be specified.

16.2 The supplier shall furnish the purchaser with an invoice accompanied by a copy of the delivery note and upon fulfillment of other obligations stipulated in the contract.

16.3 Payments shall be made promptly by the purchaser, but in no case later than thirty (30) days after submission of an invoice or claim by the supplier.

16.4 Payment will be made in Rand unless otherwise stipulated.

17. Prices:

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

18. Variation orders:

18.1 In cases where the estimated value of the envisaged changes in purchase does not exceed 15% of the total value of the original contract, the contractor may be instructed to deliver the goods or render the services as such. In cases of measurable quantities, the contractor may be approached to reduce the unit price, and such offers may be accepted provided that there is no escalation in price.

19. Assignment:

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

20. Subcontracts:

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

21. Delays in the Supplier's Performance:

21.1 Delivery of the goods and performance of services shall be made by the supplier in accordance with the time schedule prescribed by the purchaser in the contract.

21.2 If at any time during performance of the contract, the supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may at his discretion extend the supplier's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.

21.3 The right is reserved to procure outside of the contract small quantities or to have minor essential services executed if an emergency arises, the supplier's point of supply is not situated at or near the place where the goods are required, or the supplier's services are not readily available.

21.4 Except as provided under GCC Clause 25, a delay by the supplier in the performance of its delivery obligations shall render the supplier liable to the imposition of penalties, pursuant to GCC Clause 22, unless an extension of time is agreed upon pursuant to GCC Clause 22.2 without the application of penalties.

21.5 Upon any delay beyond the delivery period in the case of a goods contract, the purchaser shall, without cancelling the contract, be entitled to purchase supplies of a similar quality and up to the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the supplier's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and without prejudice to his other rights, be entitled to claim damages from the supplier.

22. Penalties:

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

23. Termination for default:

23.1 The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate this contract in whole or in part:

(a) if the supplier fails to deliver any or all of the goods within the period(s) specified in the contract, or within any extension thereof granted by the purchaser pursuant to GCC Clause 21.2;

(b) if the supplier fails to perform any other obligation(s) under the contract; or

(c) if the supplier, in the judgement of the purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.

23.2 In the event the purchaser terminates the contract in whole or in part, the purchaser may procure, upon such terms and in such manner as it deems appropriate, goods, works or services similar to those undelivered, and the supplier shall be liable to the purchaser for any excess costs for such similar goods, works or services. However, the supplier shall continue performance of the contract to the extent not terminated.

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

23.4 If a purchaser intends imposing a restriction on a supplier or any person associated with the supplier, the supplier will be allowed a time period of not more than fourteen (14) days to provide reasons why the envisaged restriction should not be imposed. Should the supplier fail to respond within the stipulated fourteen (14) days the purchaser may regard the supplier as having no objection and proceed with the restriction.

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

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

(i) the name and address of the supplier and / or person restricted by the purchaser;

(ii) the date of commencement of the restriction;

(iii) the period of restriction; and

(iv) the reasons for the restriction.

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

23.7 If a court of law convicts a person of an offence as contemplated in sections 12 or 13 of the Prevention and Combating of Corrupt Activities Act, No 12 of 2004, the court may also rule that such person's name be endorsed on the Register for Tender Defaulters. When a person's name has been endorsed on the Register, the person will be prohibited from doing business with the public sector for a period not less than five years and not more than 10 years. The National Treasury is empowered to determine the period of restriction and each case will be dealt with on its own merits. According to section 32 of the Act the Register must be open to the public. The Register can be perused on the National Treasury website.

24. <u>Anti-Dumping and Counter-Vailing duties and rights</u>:

24.1 When, after the date of bid, provisional payments are required, or anti-dumping or countervailing duties are imposed, or the amount of a provisional payment or anti-dumping or countervailing right is increased in respect of any dumped or subsidized import, the State is not liable for any amount so required or imposed, or for the amount of any such increase. When, after the said date, such a provisional payment is no longer required or any such anti-

dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favourable difference shall on demand be paid forthwith by the supplier to the purchaser or the purchaser may deduct such amounts from moneys (if any) which may otherwise be due to the supplier in regard to supplies or services which he delivered or rendered, or is to deliver or render in terms of the contract or any other contract or any other amount which may be due to him.

25. Force Majeure:

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

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

26. Termination for insolvency:

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

27. Settlement of disputes:

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

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

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

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

(a) the parties shall continue to perform their respective obligations under the contract unless they otherwise agree; and

(b) the purchaser shall pay the supplier any monies due to the supplier for goods delivered and / or services rendered according to the prescripts of the contract.

28. Limitation of liability:

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

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

29. Governing language:

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

30. Applicable law:

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

31. Notices:

31.1 Every written acceptance of a bid shall be posted to the supplier concerned by registered or certified mail and any other notice to him shall be posted by ordinary mail to the address furnished in his bid or to the address notified later by him in writing and such posting shall be deemed to be proper service of such notice.
31.2 The time mentioned in the contract documents for performing any act after such aforesaid notice has been given, shall be reckoned from the date of posting of such notice.

32. Taxes and duties:

32.1 A foreign supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the purchaser's country.
32.2 A local supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted goods to the purchaser.
32.3 No contract shall be concluded with any bidder whose tax matters are not in order. Prior to the award of a bid SARS must have certified that the tax matters of the preferred bidder are in order.
32.4 No contract shall be concluded with any bidder whose municipal rates and taxes and municipal services charges are in arrears.

33. Transfer of contracts:

33.1 The contractor shall not abandon, transfer, cede assign or sublet a contract or part thereof without the written permission of the purchaser.

34. Amendment of contracts:

34.1 No agreement to amend or vary a contract or order or the conditions, stipulations or provisions thereof shall be valid and of any force unless such agreement to amend or vary is entered into in writing and signed by the

contracting parties. Any waiver of the requirement that the agreement to amend or vary shall be in writing, shall also be in writing.

35. Prohibition of restrictive practices:

35.1 In terms of section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, an agreement between, or concerted practice by, firms, or a decision by an association of firms, is prohibited if it is between parties in a horizontal relationship and if a bidder(s) is / are or a contractor(s) was / were involved in collusive bidding.

35.2 If a bidder(s) or contractor(s) based on reasonable grounds or evidence obtained by the purchaser has / have engaged in the restrictive practice referred to above, the purchaser may refer the matter to the Competition Commission for investigation and possible imposition of administrative penalties are contemplated in section 59 of the Competition Act No 89 of 1998.

35.3 If a bidder(s) or contractor(s) has / have been found guilty by the Competition Commission of the restrictive practice referred to above, the purchaser may, in addition and without prejudice to any other remedy provided for, invalidate the bid(s) for such item(s) offered, and / or terminate the contract in whole or part, and / or restrict the bidder(s) or contractor(s) from conducting business with the public sector for a period not exceeding ten (10) years and / or claim damages from the bidder(s) or contractor(s) concerned.