



Mnquma Local Municipality. Corner King and Mthatha Street. Butterworth. 4960  
Postal Address. PO Box 36. Butterworth. 4960  
Tel: (047) 401 2400. Fax: (047) 491 0195. [www.mnquma.gov.za](http://www.mnquma.gov.za)

**BID NO.: MNQ/SCM/97/20-21**

**PROJECT NAME: APPOINTMENT FOR SPECIFICATION FOR SUPPLY, INSTALLATION AND COMMISSIONING OF STANDBY GENERATORS, UPS AND REFURBISHMENT OF ELECTRICAL DISTRIBUTION BOARD INCLUDING MAINTENANCE FOR MNQUMA LOCAL MUNICIPALITY**

**CLOSING DATE: 12/08/2021**

**CLOSING TIME: 12H00**

**TENDER BOX ADDRESS: MNQUMA LOCAL MUNICIPALITY - CORNER KING AND MTHATHA STREET – BUTTERWORTH - 4960**

**TENDER DOCUMENT FEE: NONE**

**IMPORTANT NOTES TO BIDDERS:**

- Tenders must be properly received and deposited in the above mentioned tender box on or before the closing date at **Mnquma Local Municipality, Corner King and Mthatha Street, Butterworth, 49560**. No late, couriered, faxed or emailed tenders will be accepted under any circumstances. Tender offers must be submitted in a sealed envelope clearly reflecting the tender number and tender description as indicated above.
- Do not reproduce this tender document (do not take it apart, omit pages, change wording or put documents between its pages). All other mandatory documents must be attached as per the advert requirements.
- Initial each and every page. Site meetings will be reflected on adverts if attendance is compulsory.

TENDERER	
<b>NAME of Company/Close Corporation or Partnership /Consortium/ Joint Venture or Sole Proprietor /Individual/Other</b>	
<b>TRADING AS (if different from above)</b>	
<b>COMPANY REGISTRATION NUMBER</b>	

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**MBD 1**  
**1. INVITATION TO BID**

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE MNQUMA LOCAL MUNICIPALITY

BID NUMBER: **MNQ/SCM/97/20-21**  
CLOSING TIME: **12H00**

CLOSING DATE: **12/08 /2021**

**DESCRIPTION: APPOINTMENT FOR SPECIFICATION FOR SUPPLY, INSTALLATION AND COMMISSIONING OF STANDBY GENERATORS, UPS AND REFURBISHMENT OF ELECTRICAL DISTRIBUTION BOARD INCLUDING MAINTENANCE FOR MNQUMA LOCAL MUNICIPALITY**

**The successful bidder will be required to fill in and sign a written Contract Form (MBD 7).**

ENQUIRIES MAY BE DIRECTED TO:

**Ms. NP. Mnini**  
**MANAGER: SUPPLY CHAIN MANAGEMENT**  
**Tell: (047) 050 1150**  
**DURING OFFICE HOURS**

OR

**TENDER DOCUMENTS MUST BE DEPOSITED IN THE BID BOX SITUATED AT:**  
**MNQUMA LOCAL MUNICIPALITY**  
**CORNER KING AND MTHATHA STREET**  
**BUTTERWORTH**  
**49560**

**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 generally open 24 hours a day, 5 days a week.**

**ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS – (NOT TO BE RE-TYPED)**

**THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT**

**NB: NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE (as defined in Regulation 1 of the Local Government: Municipal Supply Chain Management Regulations)**



### PROJECT DESCRIPTION

Mnquma Local Municipality hereby invites bids from all prospective accredited and qualifying service provider for

BID NO.	Description	Evaluation Criteria	Closing Date
MNQ/SCM/ 97/20-21	Appointment of a Service Provider for Supply, Installation and Commissioning of Standby Generators, Ups and Refurbishment of Electrical Distribution Board Including Maintenance for Mnquma Local Municipality	80/20	Date 12/08 / 2021 Time:12H00

#### Tender Briefing Sessions:

There will be no compulsory briefing sessions due to COVID 19 pandemic. Bidders are requested to send electronic mails for any enquiry related to the above bids. Bidders are required to specify on the email the bid number and the project name query. Email enquiries which will be considered from the 02/08/2021 to 09/08/2021.

All enquiries must be directed to the following email addresses:

**Enquiries: Mr. Msimelelo Best (Manager: ICT) at 047 050 1134/073 059 4587 email:**

[mbest@mnquma.gov.za](mailto:mbest@mnquma.gov.za) and **Ms. Nontathu Mnini ( Manager: SCM) at (047) 0501150/082 457 9945 email:**

[nmnini@mnquma.gov.za](mailto:nmnini@mnquma.gov.za)

**Evaluation Criteria:** The evaluation will be conducted in three (03) stages namely:

#### Stage 1: "Administrative compliance"

Bidders that do not meet the Administrative compliance (Compliance with mandatory and other bid requirements) will not be eligible for further evaluation and will be deemed as non-responsive.

#### Stage 2: Evaluation in terms of the minimum stipulated threshold for local production content

- Only local produced goods, services or works or local manufactured good with a 100% for Steel products and components for construction., 90% for electrical cables. Therefore, only bids that achieved the minimum stipulated threshold for local production content will be considered.
- The exchange rate to be used for calculation of local production and content must be the exchange rate published South African Reserve Bank (SARB) 12H00 on the date of the advertisement of the bid; and
- Only the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2011 must be used to calculate local content.

Only bids achieve the above minimum stipulated threshold for local production and content will be evaluated further to the next stage.

**Stage 3: Evaluation in terms of the 80/20 preference point systems prescribed in Preferential Procurement Regulations**

Price=80 points, B-BBEE=20 points. Bidders are required to submit an original or certified copy of B-BBEE certificate to claim preferential points.

**REQUIRED DOCUMENTS:**

Potential bidders are urged to submit the following attachments when submitting their proposals, failure to do so will lead to disqualification.

- Full CSD Report (Not older than one Month)
- Fully Completed and signed Tender Forms i.e. Form of Offer, all returnable MBDs (MBD 1-9 (Part of the document). Return all returnable documents to the employer after completing them entirely by writing legibly in non-erasable ink.
- Only the original tender document will be accepted.
- In the case of partnerships/ consortiums/ joint venture agreement, signed agreement must be submitted with the tender document (attached to Schedule 2).
- In addition to the above general required documents the following should be complied with:
- Declaration Certificate for Local Production and Content (SBD / MBD 6.2) together with the Annex C (Local Content Declaration: Summary Schedule) must be completed, duly signed and submitted by the bidder at the closing date and time of the bid
- A copy of the authorization letter must be submitted together with the bid document at the closing date and time of the bid Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)] are accessible to all potential bidders on the dti's official website

**OBTAINING OF TENDER DOCUMENTS:**

Tender documents for this project can be downloadable at the Mquma Local website [www.mnquma.gov.za](http://www.mnquma.gov.za) and on etender portal <https://etenders.treasury.gov.za>

**TENDER SUBMISSION AND OPENING**

Tenders/Proposals must be submitted by hand at Bid Box, Corner King and Mthatha Street, Butterworth. 4960

Tenders should be sealed, endorsed on the envelope with:

BID NO.MNQ/SCM/97/20-21

**PROJECT NAME: APPOINTMENT OF A SERVICE PROVIDER FOR SUPPLY, INSTALLATION AND COMMISSIONING OF STANDBY GENERATORS, UPS AND REFURBISHMENT OF ELECTRICAL DISTRIBUTION BOARD INCLUDING MAINTENANCE FOR MNQUMA LOCAL MUNICIPALITY .**

**CONDITIONS OF ACCEPTANCE:**

- The Municipality is under no obligation to accept any proposal/tender and reserves the right to accept the whole or any part of the proposal/tender. No proposal/tenders will be considered from persons in the service of the state.
- The bidder or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;
- The bidder has not abused the Employer's Supply Chain Management System; or failed to perform on any previous contract and has been given a written notice to this effect.
- No late, incomplete, unsigned faxed, couriered, and emailed tenders will be accepted
- The tender offer submitted shall remain valid, irrevocable and open for written acceptance by the Mquma Local Municipality for a period of 90 days from the closing date.
- The award of the tender may be subjected to price negotiation with the preferred tenderers.
- The municipality reserves the right to extend the tender period by notice in the press and on the municipality's official website [www.mnquma.gov.za](http://www.mnquma.gov.za)

**NB: Preferred bidders will be required to furnish the municipality with:**

- CK/ Company registration, Certified ID Copies not later than 3 month
- Tax Compliance Status PIN
- Certificate issued by the municipality or any other municipality to which he may be indebted to the effect that he and, in the event of the bidder being a company, also any of its directors, is not indebted to the municipality or any other municipality or municipal entity for rates, taxes and/or municipal service charges which are in arrear for a period more than **three months** and that no dispute exists between such bidder and municipality or municipal entity concerned in respect of any such arrear amounts. Bidders who reside within the Mquma Local Municipality (MLM) jurisdiction will be verified with MLM Revenue Section.

**S. MAHLASELA  
MUNICIPAL MANAGER**

**PART A  
INVITATION TO BID**

<b>YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (NAME OF MUNICIPALITY/ MUNICIPAL ENTITY)</b>					
BID NUMBER:		CLOSING DATE:		CLOSING TIME:	
DESCRIPTION					
<b>THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).</b>					
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT (STREET ADDRESS					
MNQUMA LOCAL MUNICIPALITY					
CORNER KING AND MTHATHA STREET					
BUTTERWORTH					
49560					
<b>SUPPLIER INFORMATION</b>					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
TAX COMPLIANCE STATUS	TCS PIN:		OR	CSD No:	
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX]	<input type="checkbox"/> Yes  <input type="checkbox"/> No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT  <input type="checkbox"/> Yes  <input type="checkbox"/> No		
<b>[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES &amp; QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]</b>					
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?  <input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES, ANSWER PART B:3 ]		
TOTAL NUMBER OF ITEMS OFFERED			TOTAL BID PRICE		R
SIGNATURE OF BIDDER	.....		DATE		
CAPACITY UNDER WHICH THIS BID IS SIGNED					
<b>BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:</b>			<b>TECHNICAL INFORMATION MAY BE DIRECTED TO:</b>		
DEPARTMENT	SUPPLY MANAGEMENT CHAIN		DEPARTMENT		
CONTACT PERSON	MS NP MNINI		CONTACT PERSON		
TELEPHONE NUMBER	(047) 050 1150		TELEPHONE NUMBER		
FACSIMILE NUMBER			FACSIMILE NUMBER		
E-MAIL ADDRESS	<a href="mailto:nmnini@mnguma.gov.za">nmnini@mnguma.gov.za</a>		E-MAIL ADDRESS		

**PART B**  
**TERMS AND CONDITIONS FOR BIDDING**

<b>1. BID SUBMISSION:</b>	
<p>1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.</p> <p>1.2. <b>ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR ONLINE</b></p> <p>1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.</p>	
<b>2. TAX COMPLIANCE REQUIREMENTS</b>	
<p>2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.</p> <p>2.2 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.</p> <p>2.3 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.</p> <p>2.4 FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.</p> <p>2.5 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.</p> <p>2.6 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.</p> <p>2.7 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.</p>	
<b>3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS</b>	
<p>3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?</p> <p style="padding-left: 40px;"><input type="checkbox"/> NO</p> <p>3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA?</p> <p style="padding-left: 40px;"><input type="checkbox"/> NO</p> <p>3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?</p> <p style="padding-left: 40px;"><input type="checkbox"/> NO</p> <p>3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?</p> <p style="padding-left: 40px;"><input type="checkbox"/> NO</p> <p>3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?</p> <p style="padding-left: 40px;"><input type="checkbox"/> NO</p> <p><b>IF THE ANSWER IS “NO” TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.</b></p>	<p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> YES</p>

**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: .....

## **1. TAX CLEARANCE CERTIFICATE REQUIREMENTS**

It is a condition of bid that the taxes of the successful bidder must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the bidder's tax obligations.

1. In order to meet this requirement bidder are required to complete in full the attached form TCC 001 "Application for a Tax Clearance Certificate" and submit it to any SARS branch office nationally. The Tax Clearance Certificate Requirements are also applicable to foreign bidders / individuals who wish to submit bids.
2. SARS will then furnish the bidder with a Tax Clearance Certificate that will be valid for a period of 1 (one) year from the date of approval.
3. The original Tax Clearance Certificate must be submitted together with the bid. Failure to submit the original and valid Tax Clearance Certificate will result in the invalidation of the bid. Certified copies of the Tax Clearance Certificate will not be acceptable.
4. In bids where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Clearance Certificate.
5. Copies of the TCC 001 "Application for a Tax Clearance Certificate" form are available from any SARS branch office nationally or on the website [www.sars.gov.za](http://www.sars.gov.za).
6. Applications for the Tax Clearance Certificates may also be made via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website [www.sars.gov.za](http://www.sars.gov.za).

### **2.1 SARS APPLICATION FOR TCC MBD**



## 2. PRICING SCHEDULE – FIRM PRICES (PURCHASES)

**NOTE: ONLY FIRM PRICES WILL BE ACCEPTED. NON-FIRM PRICES (INCLUDING PRICES SUBJECT TO RATES OF EXCHANGE VARIATIONS) WILL NOT BE CONSIDERED**

**IN CASES WHERE DIFFERENT DELIVERY POINTS INFLUENCE THE PRICING, A SEPARATE PRICING SCHEDULE MUST BE SUBMITTED FOR EACH DELIVERY POINT**

Name of Bidder.....	Bid Number.....
Closing Time .....	Closing Date .....

OFFER TO BE VALID FOR.....DAYS FROM THE CLOSING DATE OF BID.

ITEM NO.	QUANTITY	DESCRIPTION	BID PRICE IN RSA CURRENCY **(ALL APPLICABLE TAXES INCLUDED)
<hr/>			
-	Required by:	.....	
-	At:	.....	
		.....	
-	Brand and Model	.....	
-	Country of Origin	.....	
-	Does the offer comply with the specification(s)?		*YES/NO
-	If not to specification, indicate deviation(s)	.....	
-	Period required for delivery	.....	
			*Delivery: Firm/Not firm
-	Delivery basis	.....	

Note: All delivery costs must be included in the bid price, for delivery at the prescribed destination.

\*\* "all applicable taxes" includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.

### 3.1 PRICING SCHEDULE AND SPECIFICATION (SECTION 2)

#### Pricing Instructions:

1. All prices shall be tendered including VAT, customs or excise duty and any other duty, levy, or other applicable tax.
2. All prices shall be tendered in accordance with the units specified in this schedule.
3. All prices tendered must include all expenses, disbursements and costs (e.g. transport, overheads, accommodation etc.) that may be required in and for the execution of the work described in the Specification, 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.
4. Bidders must also indicate the expected delivery date.

DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE R
Supply, Installation and Commissioning of Standby Generators	1	R	R
Supply, Installation and Commissioning Ups	1	R	R
Refurbishment of Electrical Distribution Board	1	R	R
Maintenance Plan	36 Months	R	R
<b>SUB - TOTAL</b>		R	R
<b>VAT 15 %</b>		R	R
<b>TOTAL</b>		R	R

Detailed specification attached in page 47

**STRICT DELIVERY DATES WILL BE OBSERVED AND PENALTIES WILL BE IMPOSED FOR LATE DELIVERIES.**

**BIDDERS MUST TAKE SPECIAL NOTE OF SECTION 22.1 OF THE GENERAL CONDITIONS IN THE TENDER DOCUMENT.**

## 2.2 TENDER OFFER

I, \_\_\_\_\_ (duly authorized to represent the tenderer 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 document to the Mngquma Local Municipality on the terms and conditions stipulated in this tender document and in accordance with the specification stipulated in the tender document at the prices reflected in the *Contract Form/Price Schedule*.

### **BIDDERS TOTAL OFFER (Inclusive of vat and all other charges)**

R. ....

The tenderer agrees that:

3.1 The tender offer submitted shall remain valid, irrevocable and open for written acceptance by the Mngquma Local Municipality for a period of 90 days from the closing date or for such extended period as may be applicable;

3.2 The tender offer will not be withdrawn or amended during the aforesaid validity period;

3.3 Notwithstanding the above, the tenderer may submit a written request to the Mngquma Local Municipality after the closing date for permission to withdraw the tender offer. Such withdrawal will be permitted or refused at the sole discretion of the Mngquma Local Municipality after consideration of the reasons for the withdrawal, which shall be fully set out by the tenderer in the written request for withdrawal;

3.4 Should the tender offer be withdrawn in contravention of 3.1 to 3.3 above, the tenderer agrees that:

- (a) it shall be liable to the Mngquma Local Municipality for any additional expense incurred by the Mngquma Local Municipality in having either to accept another tender or, if new tenders have to be invited, the additional expenses incurred by the invitation of new tenders and the subsequent acceptance of any other tender;
- (b) the Mngquma Local Municipality shall also have the right to recover such additional expenses by set-off against moneys which may be due or become due to the tenderer under this or any other tender or contract or against any guarantee or deposit that may have been furnished by the tenderer or on its behalf for the due fulfilment of this or any other tender or contract. Pending the ascertainment of the amount of such additional expenses, the Mngquma Local Municipality shall be entitled to retain such moneys, guarantee or deposit as security for any loss the Mngquma Local Municipality may suffer due to such withdrawal.

3.5 The tenderer agrees that this tender and its acceptance shall be subject to the terms and conditions contained in the Mngquma Local Municipality's Supply Chain Management Policy ('SCM Policy') and Combating of Abuse of the Supply Chain Management System Policy ('Abuse Policy').

\_\_\_\_\_  
Signature(s)

\_\_\_\_\_  
Print name(s):  
On behalf of the tenderer (duly authorized)

\_\_\_\_\_  
Date

### 3. DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state<sup>1</sup>.
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 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 or her representative:.....
  - 3.2 Identity Number: .....
  - 3.3 Position occupied in the Company (director, trustee, shareholder<sup>2</sup>):.....
  - 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 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 particulars. ....

<sup>1</sup>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 of 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 public entity; or
- (f) An employee of Parliament or a provincial legislature.

<sup>2</sup> Shareholder" means a person who owns shares in the company and is actively involved in the management of the company or business and exercises control over the company.

- 3.9 Have you been in the service of the state for the past twelve months? ..... **YES / NO**
  - 3.9.1 If yes, furnish particulars.....
- 3.10 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? ..... **YES / NO**

3.10.1 If yes, furnish particulars.

.....  
.....

3.11 Are you, aware of any relationship (family, friend, other) between any other bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

3.11.1 If yes, furnish particulars

.....  
.....

3.12 Are any of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state? **YES / NO**

3.12.1 If yes, furnish particulars.

.....  
.....

3.13 Are any spouse, child or parent of the company's director's trustees, managers, principle shareholders or stakeholders in service of the state? **YES / NO**

3.13.1 If yes, furnish particulars.

.....  
.....

3.14 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? **YES / NO**

3.14.1 If yes, furnish particulars:

.....

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

Full Name	Identity Number	State Employee Number

.....  
**Signature**

.....  
**Date**

.....  
**Capacity**

.....  
**Name of Bidder**

## PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution

**NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017.**

### 1. GENERAL CONDITIONS

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

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

1.2 The value of this bid is estimated not exceed R50 000 000 (all applicable taxes included) and therefore the 80/20 preference point system shall be applicable.

1.3 Preference points for this bid shall be awarded for:

- (a) Price; and
- (b) B-BBEE Status Level of Contribution.

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

	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTION	20
<b>Total points for Price and B-BBEE must not exceed</b>	<b>100</b>

1.5 Failure on the part of a bidder to submit a B-BBEE Verification Certificate from a Verification Agency accredited by the South African Accreditation System (SANAS), or a Registered Auditor approved by the Independent Regulatory Board of Auditors (IRBA) or a sworn affidavit confirming annual turnover and level of black ownership in case of an EME and QSE together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

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

### 2. DEFINITIONS

- (a) **“all applicable taxes”** includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies;
- (b) **“B-BBEE”** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;

- (c) **“B-BBEE status level of contributor”** means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (d) **“bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;
- (e) **“Broad-Based Black Economic Empowerment Act”** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003) as amended by Act No 46 of 2013;
- (f) **“comparative price”** means the price after the factors of a non-firm price and all unconditional discounts that can be utilized have been taken into consideration;
- (g) **“consortium or joint venture”** 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;
- (h) **“contract”** means the agreement that results from the acceptance of a bid by an organ of state;
- (i) **“EME”** means an Exempted Micro Enterprise as defines by Codes of Good Practice issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (j) **“Firm price”** means the price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs or excise duty and any other duty, levy, or tax, which, in terms of the law or regulation, is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract;
- (k) **“functionality”** means the measurement according to predetermined norms, as set out in the bid documents, of a service or commodity that is designed to be practical and useful, working or operating, taking into account, among other factors, the quality, reliability, viability and durability of a service and the technical capacity and ability of a bidder;
- (l) **“non-firm prices”** means all prices other than “firm” prices;
- (m) **“person”** includes a juristic person;
- (n) **“QSE”** means a Qualifying Small Enterprise as defines by Codes of Good Practice issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 ( Act No. 53 of 2003);
- (o) **“rand value”** means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties;
- (p) **“sub-contract”** means the primary contractor’s assigning, leasing, making out work to, or employing, another person to support such primary contractor in the execution of part of a project in terms of the contract;
- (q) **“total revenue”** bears the same meaning assigned to this expression in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act and promulgated in the *Government Gazette* on 9 February 2007;
- (r) **“trust”** means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person; and
- (s) **“trustee”** means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.

### 3. ADJUDICATION USING A POINT SYSTEM

- 3.1 The bidder obtaining the highest number of total points will be awarded the contract.
- 3.2 Preference points shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts;.
- 3.3 Points scored must be rounded off to the nearest 2 decimal places.

- 3.4 In the event that two or more bids have scored equal total points, the successful bid must be the one scoring the highest number of preference points for B-BBEE.
- 3.5 However, when functionality is part of the evaluation process and two or more bids have scored equal points including equal preference points for B-BBEE, the successful bid must be the one scoring the highest score for functionality.
- 3.6 Should two or more bids be equal in all respects, the award shall be decided by the drawing of lots.

#### 4. POINTS AWARDED FOR PRICE

##### 4.1 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**

$$Ps = 80 \left\{ 1 - \frac{Pt - P_{min}}{P_{min}} \right\} \quad \text{or} \quad Ps = 90 \left\{ 1 - \frac{Pt - P_{min}}{P_{min}} \right\}$$

Where

Ps = Points scored for comparative price of bid under consideration

Pt = Comparative price of bid under consideration

Pmin = Comparative price of lowest acceptable bid

#### 5. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTION

- 5.1 In terms of Regulation 6 (2) and 7 (2) of the Preferential Procurement Regulations 2017, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (90/10 system)	Number of points (80/20 system)
1	10	20
2	9	18
3	6	14
4	5	12
5	4	8
6	3	6
7	2	4
8	1	2
Non-compliant contributor	0	0

- 5.2 A bidder who qualifies as an EME in terms of the B-BBEE Act must submit a sworn affidavit confirming Annual Total Revenue and Level of Black Ownership.
- 5.3 A Bidder other than EME or QSE must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating issued by a Registered Auditor approved by IRBA or a Verification Agency accredited by SANAS.
- 5.4 A trust, consortium or joint venture, 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.

5.5 A trust, consortium or joint venture will qualify for points for their B-BBEE status level as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate bid.

5.6 Tertiary Institutions and Public Entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.

5.7 A person will not be awarded points for B-BBEE status level if it is indicated in the bid documents that such a bidder intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended sub-contractor is an EME that has the capability and ability to execute the sub-contract.

5.8 A person awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an EME that has the capability and ability to execute the sub-contract.

## 6. BID DECLARATION

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

### 7. B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED IN TERMS OF PARAGRAPHS

#### 1.4 AND 5.1

7.1 B-BBEE Status Level of Contribution: = (maximum of 10 or 20 points)  
(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 5.1 and must be substantiated by means of a B-BBEE certificate issued by a Verification Agency accredited by SANAS or a Registered Auditor approved by IRBA or a sworn affidavit.

## 8. SUB-CONTRACTING

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

(***Tick applicable box***)

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

8.1.1 If yes, indicate:

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

(***Tick applicable box***)

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

## 9. DECLARATION WITH REGARD TO COMPANY/FIRM

9.1 Name of company/firm:.....

9.2 VAT registration number:..... 9.3 Company registration number:.....

9.4 TYPE OF COMPANY/ FIRM

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

[TICK APPLICABLE BOX]

9.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

9.6 COMPANY CLASSIFICATION

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

[TICK APPLICABLE BOX]

9.7 MUNICIPAL INFORMATION

**Municipality where business is situated:** .....

**Registered Account Number:** .....

**Stand Number:** .....

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

9.9 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contribution indicated in paragraph 7 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct; ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 7, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If the B-BBEE status level of contribution has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –
  - (a) disqualify the person from the bidding process;
  - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
  - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
  - (d) restrict the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, 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.

WITNESSES

1. ....

2. ....

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

DATE: .....

ADDRESS .....

.....

.....

## DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS

This Municipal Bidding Document (MBD) must form part of all bids invited. It contains general information and serves as a declaration form for local content (local production and local content are used interchangeably).

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2011 and the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2011 (Edition 1) and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].

### 1. General Conditions

- 1.1. Preferential Procurement Regulations, 2011 (Regulation 9) makes provision for the promotion of local production and content.
- 1.2. Regulation 9.(1) prescribes that in the case of designated sectors, where in the award of bids local production and content is of critical importance, such bids must be advertised with the specific bidding condition that only locally produced goods, services or works or locally manufactured goods, with a stipulated minimum threshold for local production and content will be considered.
- 1.3. Where necessary, for bids referred to in paragraph 1.2 above, a two stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.
- 1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.
- 1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

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

Where

x is the imported content in Rand

y is the bid price in Rand excluding value added tax (VAT)

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

**The SABS approved technical specification number SATS 1286:2011 is accessible on [http://www.thedti.gov.za/industrial development/ip.jsp](http://www.thedti.gov.za/industrial%20development/ip.jsp) at no cost.**

- 1.6. A bid may be disqualified if –
  - (a) this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule) are not submitted as part of the bid documentation; and
  - (b) the bidder fails to declare that the Local Content Declaration Templates (Annex C, D and E) have been audited and certified as correct.

### 2. Definitions

- 2.1. **“bid”** includes written price quotations, advertised competitive bids or proposals;
- 2.2. **“bid price”** price offered by the bidder, excluding value added tax (VAT);

- 2.3. **“contract”** means the agreement that results from the acceptance of a bid by an organ of state;
- 2.4. **“designated sector”** means a sector, sub-sector or industry that has been designated by the Department of Trade and Industry in line with national development and industrial policies for local production, where only locally produced services, works or goods or locally manufactured goods meet the stipulated minimum threshold for local production and content;
- 2.5. **“duly sign”** means a Declaration Certificate for Local Content that has been signed by the Chief Financial Officer or other legally responsible person nominated in writing by the Chief Executive, or senior member / person with management responsibility(close corporation, partnership or individual).
- 2.6. **“imported content”** means that portion of the bid price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or its subcontractors) and which costs are inclusive of the costs abroad (this includes labour and intellectual property costs), plus freight and other direct importation costs, such as landing costs, dock duties, import duty, sales duty or other similar tax or duty at the South African port of entry;
- 2.7. **“local content”** means that portion of the bid price which is not included in the imported content, provided that local manufacture does take place;
- 2.8. **“stipulated minimum threshold”** means that portion of local production and content as determined by the Department of Trade and Industry; and
- 2.9. **“sub-contract”** means the primary contractor's assigning, leasing, making out work to, or employing another person to support such primary contractor in the execution of part of a project in terms of the contract.

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

<u>Description of services, works or goods</u>	<u>Stipulated minimum threshold</u>
_____	_____ %
_____	_____ %
_____	_____ %

4. Does any portion of the services, works or goods offered have any imported content?  
(**Tick applicable box**)

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

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

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

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

<b>Currency</b>	<b>Rates of exchange</b>
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

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

5. Were the Local Content Declaration Templates (Annex C, D and E) audited and certified as correct?  
(**Tick applicable box**)

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

- 5.1. If yes, provide the following particulars:

- (a) Full name of auditor: .....  
(b) Practice number: .....  
(c) Telephone and cell number: .....  
(d) Email address: .....

(Documentary proof regarding the declaration will, when required, be submitted to the satisfaction of the Accounting Officer / Accounting Authority)

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

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

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

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

**ISSUED BY:** (Procurement Authority / Name of Municipality / Municipal Entity):  
.....

NB

1 The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.

2 Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on [http://www.thedti.gov.za/industrial\\_development/ip.jsp](http://www.thedti.gov.za/industrial_development/ip.jsp). Bidders should first complete Declaration D. After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C. **Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph (c) below.** Declarations D and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

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

- (a) The facts contained herein are within my own personal knowledge.
- (b) I have satisfied myself that
- (i) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2011; and
- (ii) the declaration templates have been audited and certified to be correct.

(c)The local content percentages (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C;

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

**If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above. The local content percentages for each product has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E.**

(d) I accept that the Procurement Authority / Municipality /Municipal Entity has the right to request that the local content be verified in terms of the requirements of SATS 1286:2011.

(e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2011, may result in the Procurement Authority / Municipal / Municipal Entity imposing any or all of the remedies as provided for in Regulation 13 of the Preferential Procurement Regulations, 2011 promulgated under the Preferential Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

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

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

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

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

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

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

## Annex C

## Local Content Declaration - Summary Schedule

(C1) Tender No.  
 (C2) Tender description:  
 (C3) Designated product(s)  
 (C4) Tender Authority:  
 (C5) Tendering Entity name:  
 (C6) Tender Exchange Rate:  
 (C7) Specified local content %

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

Pula  EU  GBP

Calculation of local content							
Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Tender value net of exempted imported content	Imported value	Local value	Local content % (per item)
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)

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

(C20) Total tender value R 0

(C21) Total Exempt imported content R 0

(C22) Total Tender value net of exempt imported content R 0

(C23) Total Imported content R 0

(C24) Total local content R 0

(C25) Average local content % of tender

Signature of tenderer from Annex B

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



## Annex D

**Imported Content Declaration - Supporting Schedule to Annex C**

Tender No.	
Tender description:	
Designated Products:	
Tender Authority:	
Tendering Entity name:	
Tender Exchange Rate:	Pula

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

EU	R 9.00	GBP	R 12.00
----	--------	-----	---------

#### A. Exempted imported content

[illegible]

(D19) Total exempt imported value	R 0
-----------------------------------	-----

This total must correspond with  
Annex C - C 21

#### B. Imported directly by the Tenderer

[illegible]

(D32) Total imported value by tenderer	R 0
----------------------------------------	-----

**C. Imported by a 3rd party and supplied to the Tenderer**

[illegible]

(D45) Total imported value by 3rd party	R 0
-----------------------------------------	-----

## D. Other foreign currency payments

D. Other foreign currency payments			Calculation of foreign currency payments		Summary of payments
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange	Local value of payments
(D46)	(D47)	(D48)	(D49)	(D50)	(D51)

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

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above	R 0
------------------------------------------------------------------------------------------	-----

This total must correspond with  
Annex C - C.21

Signature of tenderer from Annex B

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

## Annex E

## Local Content Declaration - Supporting Schedule to Annex C

(E1)	Tender No.	
(E2)	Tender description:	
(E3)	Designated products:	
(E4)	Tender Authority:	
(E5)	Tendering Entity name:	

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

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

(E10) **Manpower costs** ( Tenderer's manpower cost ) R 0

(E11) **Factory overheads** (Rental, depreciation & amortisation, utility costs, consumables etc. ) R 0

(E12) **Administration overheads and mark-up** (Marketing, insurance, financing, interest etc. ) R 0

(E13) Total local content R 0

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

Signature of tenderer from Annex B

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

**CONTRACT FORM - PURCHASE OF GOODS/WORKS**

**THIS FORM MUST BE FILLED IN DUPLICATE BY BOTH THE SUCCESSFUL BIDDER (PART 1) AND THE PURCHASER (PART 2). BOTH FORMS MUST BE SIGNED IN THE ORIGINAL SO THAT THE SUCCESSFUL BIDDER AND THE PURCHASER WOULD BE IN POSSESSION OF ORIGINALLY SIGNED CONTRACTS FOR THEIR RESPECTIVE RECORDS.**

**PART 1 (TO BE FILLED IN BY THE BIDDER)**

1. I hereby undertake to supply all or any of the goods and/or works described in the attached bidding documents to (name of institution) ..... in accordance with the requirements and specifications stipulated in bid number..... at the price/s quoted. My offer/s remain binding upon me and open for acceptance by the purchaser during the validity period indicated and calculated from the closing time of bid.
2. The following documents shall be deemed to form and be read and construed as part of this agreement:
  - (i) Bidding documents, viz
    - Invitation to bid;
    - Tax clearance certificate;
    - Pricing schedule(s);
    - Technical Specification(s);
    - Preference claims for Broad Based Black Economic Empowerment Status Level of Contribution in terms of the Preferential Procurement Regulations 2011;
    - Declaration of interest;
    - Declaration of bidder's past SCM practices;
    - Certificate of Independent Bid Determination;
    - Special Conditions of Contract;
  - (ii) General Conditions of Contract; and
  - (iii) Other (specify)
3. I confirm that I have satisfied myself as to the correctness and validity of my bid; that the price(s) and rate(s) quoted cover all the goods and/or works specified in the bidding documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.
4. I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this agreement as the principal liable for the due fulfilment of this contract.
5. I declare that I have no participation in any collusive practices with any bidder or any other person regarding this or any other bid.
6. I confirm that I am duly authorised to sign this contract.

NAME (PRINT) .....

CAPACITY .....

SIGNATURE .....

NAME OF FIRM .....

DATE .....

WITNESSES	
1	.....
2.	.....
DATE:.....	

**CONTRACT FORM - PURCHASE OF GOODS/WORKS**

**PART 2 (TO BE FILLED IN BY THE PURCHASER)**

1. I..... in my capacity as.....  
accept your bid under reference number .....dated.....for the supply of  
goods/works indicated hereunder and/or further specified in the annexure(s).
2. An official order indicating delivery instructions is forthcoming.
3. I undertake to make payment for the goods/works delivered in accordance with the terms and conditions of  
the contract, within 30 (thirty) days after receipt of an invoice accompanied by the delivery note.

ITEM NO.	PRICE (ALL APPLICABLE TAXES INCLUDED)	BRAND	DELIVERY PERIOD	B-BBEE STATUS LEVEL OF CONTRIBUTION	MINIMUM THRESHOLD FOR LOCAL PRODUCTION AND CONTENT (if applicable)

4. I confirm that I am duly authorized to sign this contract.

SIGNED AT .....ON.....

NAME (PRINT) .....

SIGNATURE .....

OFFICIAL STAMP

WITNESSES

1. ....

2. ....

DATE .....

## 8. 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	<p>Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector?</p> <p>(Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the <i>audi alteram partem</i> rule was applied).</p> <p><b>The Database of Restricted Suppliers now resides on the National Treasury's website (<a href="http://www.treasury.gov.za">www.treasury.gov.za</a>) and can be accessed by clicking on its link at the bottom of the home page.</b></p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.1.1	If so, furnish particulars:		
4.2	<p>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)?</p> <p><b>The Register for Tender Defaulters can be accessed on the National Treasury's website (<a href="http://www.treasury.gov.za">www.treasury.gov.za</a>) by clicking on its link at the bottom of the home page.</b></p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.2.1	If so, furnish particulars:		
4.3	<p>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?</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

4.3.1	If so, furnish particulars:		
<b>Item</b>	<b>Question</b>	<b>Yes</b>	<b>No</b>
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality, or to any other municipality, that is in arrears for more than three months?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the bidder and the municipality 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 <input type="checkbox"/>	No <input type="checkbox"/>
4.7.1	If so, furnish particulars:		

### CERTIFICATION

I, THE UNDERSIGNED (FULL NAME) .....  
 CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM 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**

**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:

\_\_\_\_\_  
(MnqumaLocal 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.
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<sup>3</sup> 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**

## 10.CONDITIONS OF TENDER

**TENDER CONDITIONS AND/OR INSTRUCTIONS SET OUT BELOW MUST BE STRICTLY ADHERED TO, FAILING WHICH THIS TENDER SUBMISSION WILL BE DECLARED NON-RESPONSIVE.**

- 10.1. No tender will be considered unless submitted on this Mnquma Local Municipality tender document.
- 10.2 Any portion of the tender document not completed will be interpreted as 'not applicable'. Notwithstanding the foregoing, failure to complete any compulsory portion of the tender document may result in the tender being declared non-responsive.
- 10.3 Tenders must be properly received and deposited, on or before the closing date and before the closing time, in the relevant tender box. If the tender submission is too large to fit in the allocated box, please enquire at the reception for assistance.
- 10.4 The Mnquma Local Municipality reserves the right to accept:
- a. the whole tender or part of a tender or any item or part of any item, or to accept more than one tender (in the event of a number of items being offered), and the Mnquma Local Municipality is not obliged to accept the lowest or any tender;
  - b. a tender which is not substantially or materially different from the tender Specification.
- 10.5 and The Mnquma Local Municipality shall not consider tenders that are received after the closing date time for such a tender.
- 10.6 The Mnquma Local Municipality will not be held responsible for any expenses incurred by tenderers in preparing and submitting tenders.
- 10.7 clarification The Mnquma Local Municipality may, after the closing date, request additional information or of tenders in writing.
- 10.8 A tenderer may request information, after the closing date, in accordance with the Promotion of Administrative Justice Act, Act 3 of 2000, and the Promotion of Access to Information Act, Act 2 of 2000.
- 10.9 A tenderer may request in writing, after the closing date, that the tender offer be withdrawn. Such withdrawal will be permitted or refused at the sole discretion of the Mnquma Local Municipality after consideration of the reasons for the withdrawal, which shall be fully set out by the tenderer in such written request for withdrawal.
- 9.10 A tender submitted:
- a. by a registered company may not be considered unless accompanied by a resolution by the Directors of the company authorising the tender to be made and the signatory to sign the tender on the company's behalf (**Schedule 1** to be completed);
  - b. by a registered close corporation may not be considered unless accompanied by written authority from all the members of the close corporation authorising the tender to be made and the signatory to sign the tender on the close corporation's behalf (**Schedule 1** to be completed);
  - c. by a partnership/consortium/joint venture may not be considered unless accompanied by written authority from all parties to the partnership/consortium/joint venture authorising the tender to be made and the signatory to sign the tender on the partnership/consortium/joint venture's behalf (**Schedule 2** to be completed).
- 10.11 Partnerships/Consortiums/Joint Ventures**
- In the case of partnerships/consortiums/joint ventures, a copy of the partnership/consortium/joint venture agreement must be submitted with the tender document (attached to **Schedule 2**). All parties/partners to the partnership/consortium/joint venture agreement must be registered on the Mnquma Local Municipality Supplier Database.



#### **10.12 Validity Period**

Any tender submitted shall remain valid, irrevocable and open for written acceptance by the Mngquma Local Municipality for a period of 90 days from the closing date or for such extended period as may be applicable.

The tender offer will not be withdrawn or amended during the aforesaid validity period. The aforesaid validity period may be extended by the provided that the original validity period has not expired, and that all tenderers are given an opportunity to extend such period. Any such extension shall be agreed to by a tenderer in writing.

Tenderers who fail to respond to such a request before the validity of their tender expires or who decline such a request shall not be considered further in the evaluation process.

In the event that an appeal in terms of the Systems Act 32 of 2000, is received, the validity period of the tender shall be deemed to be extended until finalisation of the appeal; unless the tenderer has requested in writing that its tender be withdrawn. The provisions in respect of withdrawal as set out in 10.9 above will apply to such withdrawal.

#### **10.13 Tax clearance**

No award shall be made to a person whose tax matters have not been declared to be in order by the South African Revenue Service (SARS).

Tenderers are therefore required to obtain a valid Tax Clearance Certificate from the local SARS office where such tenderer is registered for income tax/VAT purposes.

It is the responsibility of each supplier (successful tenderer) to submit updated original tax clearance certificates to the Supplier Management Office (in the Supply Chain Management department should any current certificate expire during the contract period. Failure to do so may lead to the suspension of transactions with the supplier until a valid tax clearance certificate is received by the Supplier Management Office. Each party to a consortium/joint venture/partnership must comply with all of the above.

#### **10.14 Inducements, rewards, gifts and other abuses of the Supply Chain Management System**

No person who is a provider or prospective provider of goods or services, or a recipient or prospective recipient of goods disposed or to be disposed of, may directly or indirectly:

- a. influence or interfere with the work of any Mngquma Local Municipality officials involved in the tender process in order to inter alia:
  - influence the process and/or outcome of a tender;
  - incite breach of confidentiality and/or the offering of bribes;
  - cause over- or under-invoicing;
  - influence the choice of procurement method or technical standards;
  - influence any Mngquma Local Municipality official in any way which may secure an unfair advantage during or at any stage of the procurement process.

Abuse of the supply chain management system is not permitted and may result in the tender being rejected, cancellation of the contract, 'blacklisting' and/or any such remedies as set out in the Mngquma Local Municipality SCM Policy and Abuse Policy.

#### **11. Declarations and authorization**

Tenderers are required to complete all statutory declarations and authorizations in the schedules attached to this tender document, failing which the tender may be declared non-responsive.

#### **12. Alternative offers**

Alternative tenders may be considered, provided that a tender free of qualifications and strictly in accordance with the bid documents is also submitted. The Mngquma Local Municipality shall not be bound to consider alternative tenders.

#### **13. Objections, Complaints, Queries and Disputes / Appeals in terms of Section 62 of the Systems Act / Access to Court**

**Objections, complaints, queries and disputes**

- 13.1 Persons aggrieved by decisions or actions taken by the MngqumaLocal Municipality in the implementation of the supply chain management system or any matter arising from a contract awarded in terms of the supply chain management system may, within 14 days of the decision or action, lodge a written objection or complaint or query or dispute against the decision or action.

### **Section 62 Appeals**

- 13.2 In terms of Section 62 of the Systems Act (Municipal Systems Act, Act 32 of 2000), a person whose rights are affected by a decision taken by a political structure, political office bearer, Board of directors or staff member of a MngqumaLocal Municipality in terms of a power or duty delegated or sub-delegated by a delegating authority may appeal against that decision by giving written notice of the appeal and reasons to the Accounting Officer within 21 days of the date of the notification of the decision.
- 13.3 An appeal shall contain the following:
- i. The reason and /or ground for the appeal.
  - ii. The way in which the appellant's right have been affected ;
  - iii. The remedy sought by the appellant's.

### **Access to court**

The clauses above do not influence any person's rights to approach the High Court at any time or their rights in terms of the Promotion of Administrative Justice Act, Act 3 of 2000 ('PAJA'), or the Promotion of Access to Information Act, Act 2 of 2000 ('PAIA').

## 11. GENERAL CONDITIONS OF CONTRACT

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### 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 anything 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.

- 1.8 "Delivery ex stock" means immediate delivery directly from stock actually on hand.
- 1.9 "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 supplies are so delivered and a valid receipt is obtained.
- "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.
- 1.10 "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.
- 1.11 "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.
- 1.12 "GCC" means the General Conditions of Contract.
- 1.13 "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 supplies 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 "Written" or "in writing" means handwritten 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, 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 With certain exceptions, invitations to bid are only published in the Government Tender Bulletin. The Government Tender Bulletin may be obtained directly from the Government Printer, Private Bag X85, Pretoria 0001, or accessed electronically from [www.treasury.gov.za](http://www.treasury.gov.za)

### **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 supplier 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 supplier'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 supplier 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.

### **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 supplier 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 in SCC.

### **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 supplies to be produced or services to be rendered should at any stage during production or execution or on completion be subject to inspection, the premises of the bidder or contractor shall be open, at all reasonable hours, for inspection by a representative of the Department or an organization acting on behalf of the Department.

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 supplies 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 supplies or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such supplies or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the supplier.

8.6 Supplies 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 supplies may on or after delivery be inspected, tested or analyzed and may be rejected if found not to comply with the requirements of the contract. Such rejected supplies 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 supplies which do comply with the requirements of the contract. Failing such removal the rejected supplies shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute supplies forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected supplies, purchase such supplies 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, specified in SCC, and in any subsequent instructions ordered by the purchaser.

## **10. Delivery and documents**

10.1 Delivery of the goods shall be made by the supplier in accordance with the terms specified in the contract. The details of shipping and/or other documents to be furnished by the supplier are specified in SCC.

10.2 Documents to be submitted by the supplier are specified in SCC.

## **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 in the SCC.

**12. Transportation** 12.1 Should a price other than an all-inclusive delivered price be required, this shall be specified in the SCC.

## **13. Incidental services**

13.1 The supplier may be required to provide any or all of the following services, including additional services, if any, specified in SCC:

(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 supplier for similar services.

#### **14. Spare parts**

14.1 As specified in SCC, 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 in SCC.

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 in SCC 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 in SCC, 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 in SCC.

16.2 The supplier shall furnish the purchaser with an invoice accompanied by a copy of the delivery note and upon fulfilment 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 in SCC.

#### **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 supplier in his bid, with the exception of any price adjustments authorized in SCC or in the purchaser's request for bid validity extension, as the case may be.

## **18. Contract amendments**

18.1 No variation in or modification of the terms of the contract shall be made except by written amendment signed by the parties concerned.

## **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 this 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 No provision in a contract shall be deemed to prohibit the obtaining of supplies or services from a national department, provincial department, or a local authority.

21.4 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 supplies are required, or the supplier's services are not readily available.

21.5 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 21.2 without the application of penalties.

21.6 Upon any delay beyond the delivery period in the case of a supplies 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 judgment 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 intended penalty as not objected against and may impose it on the supplier.

23.5 Any restriction imposed on any person by the Accounting Officer will, at the discretion of the Accounting Officer, 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 Accounting Officer 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. Anti-dumping and countervailing duties and rights**

24.1 When, after the date of bid, provisional payments are required, or antidumping 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 contractor to the State or the State may deduct such amounts from moneys (if any) which may otherwise be due to the contractor 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**

### **Limitation of liability**

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 Mediation proceedings shall be conducted in accordance with the rules of procedure specified in the SCC.

27.5 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 the supplier.

28.1 Except in cases of criminal negligence or wilful 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 in SCC.

## **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 the Department must be in possession of a tax clearance certificate, submitted by the bidder. This certificate must be an original issued by the South African Revenue Services.

### **33. National Industrial Participation (NIP) Programme**

#### **34 Prohibition of Restrictive practices**

33.1 The NIP Programme administered by the Department of Trade and Industry shall be applicable to all contracts that are subject to the NIP obligation.

34.1 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 (or bid rigging).

34.2 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 as contemplated in the Competition Act No. 89 of 1998.

34.3 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

## SUPPORTING SCHEDULES

### SCHEDULE 1. RESOLUTION OF DIRECTORS / MEMBERS

**RESOLUTION** for completion by Directors (if the tenderer is a (Pty) Ltd or Ltd) or Members (if the tenderer is a CC)

**NAME OF TENDERER:**\_\_\_\_\_

Meeting held at \_\_\_\_\_(place) on \_\_\_\_\_(date)

**RESOLVED THAT:**

1. The Tenderer submits a tender to the Mnquma Local Municipality in respect of

**Bid No:**..... **Project Name:**

Mr/Mrs/Ms\_\_\_\_in his/her capacity as\_\_and who will sign as follows:

**(SPECIMEN SIGNATURE)** \_\_\_\_\_

be, and is hereby, authorised 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 Tenderer.

**Note:** The resolution must be signed by all the directors /members of the Tenderer. Should the space provided below not be sufficient for all directors/members to sign, please attach a separate sheet to this schedule in the same format.

	Name	Capacity	Signature
1			
2			
3			
4			
5			

## SCHEDULE 2. CERTIFICATE OF AUTHORITY FOR PARTNERSHIPS /CONSORTIUMS / JOINT VENTURES

**This returnable schedule is to be completed if the tender is submitted by a partnership/consortium/joint venture.**

1. We, the undersigned, are submitting this tender offer as a partnership/consortium/joint venture and hereby authorise Mr/Ms \_\_\_\_\_, of the authorised entity \_\_\_\_\_, acting in the capacity of lead partner, to sign all documents in connection with the tender offer and any contract resulting from it on the partnership/consortium/joint venture's behalf.
2. By signing this schedule the partners to the partnership/consortium/joint venture:  
Warrant that the tender submitted is in accordance with the main business and objectives of the partnership/consortium/joint venture;

Agree that the Mquma Local Municipality shall make all payments in terms of this Contract into the following bank account of the Lead Partner:

Account Holder: \_\_\_\_\_

Financial Institution: \_\_\_\_\_

Branch Code: \_\_\_\_\_

Account No.: \_\_\_\_\_

Agree that in the event that there is a change in the partnership/consortium/joint venture and/or should a dispute arise between the partnership/consortium/joint venture partners, that the Mquma Local Municipality shall continue to make any/all payments due and payable in terms of the Contract into the aforesaid bank account until such time as the Mquma Local Municipality is presented with a Court Order or an original agreement (signed by each and every partner of the partnership/consortium/joint venture) notifying the Mquma Local Municipality of the details of the new bank account into which it is required to make payment.

Agree that they shall be jointly and severally liable to the Mquma Local Municipality for the due and proper fulfilment by the successful Tenderer/supplier of its obligations in terms of the Contract as well as any damages suffered by the Mquma Local Municipality as a result of breach by the successful Tenderer/supplier. The partnership/consortium/joint venture partners hereby renounce the benefits of excussion and division.

SIGNED BY THE PARTNERS OF THE PARTNERSHIP/CONSORTIUM/JOINT VENTURE		
NAME OF FIRM	ADDRESS	DULY AUTHORISED SIGNATORY
Lead partner		Signature..... Name..... Designation.....
		Signature..... Name..... Designation.....
		Signature..... Name..... Designation.....

**Note:** A copy of the Joint Venture Agreement shall be appended to **Schedule 3.**

**SCHEDULE 3. LIST OF OTHER DOCUMENTS ATTACHED BY TENDERER**

The tenderer has attached to this schedule the following additional documentation:		
	<b>Date of Document</b>	<b>Title of Document or Description</b>
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

## **SPECIFICATION**

### **PROJECT DESCRIPTION**

The specification for supply, installation and commissioning of standby generator, UPS and refurbishment of electrical distribution board including maintenance for Mquma Local Municipality.

In general, materials, supports, insulators, conductors and other components shall conform to the requirements of the South African Bureau of Standards Specifications or to the British or IEC Standard Specification referred to herein and the method of erection, stays, crossings, factors of safety and clearance to ground and obstructions shall conform to the appropriate requirements of the "Occupational Health and Safety Act 1993(Act 85 of 1993)" as amended and the "NRS 041: 1995 Code of Practice for Overhead Power Lines for Conditions Prevailing in South Africa", hereinafter referred to as the Code of Practice.

#### **i. DESIGN PARAMETERS**

The installation shall be erected and tested in accordance with the following Acts and regulations:

- a) The latest issue of SABS 0142: "Code of Practice for the Wiring of Premises",
- b) The Occupational Health and Safety Act, 1993 (Act 85 of 1993) as amended,
- c) The Local Government Ordinance 1939 (Ordinance 17 of 1939) as amended and the municipal by-laws and any special requirements of the local supply authority,
- d) The National Building Regulations and Building Standards Act 1977 (Act 103 of 1977) as amended,
- e) The Post Office Act 1958 (Act 44 of 1958) as amended,
- f) The Electricity Act 1984 (Act 41 of 1984) as amended,
- g) National Environmental Management Act, Act 107 of 1998,
- h) Public Finance Management Act, Act 1 of 1999 (PFMA).
- i) Regulations of the local Gas Board where applicable and the design has also been modelled to SANS criteria.
- j) Noise Legislation 2000/14/EC step 2006 [All enclosed products must meet or exceed]
- k) The generator set must comply with ISO 8528 regulation.
- l) Equipment must meet ISO 3046, VDE 0530, BS 4999, BS 5000, EN 60034 – I, IEC 34
- m) The generator must be designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.

#### **ii. Standby Generator**

Work will comprise the installation and commissioning of a 100Kva Standby Generator sets, engine coupled to a 100kVA, alternator complete with automatic failure control panel, exhaust silencer, fuel tank must run the generator for not less than 6 hours all mounted on a duplex "skid end" base frame and suitable rated

automatic change-over with RGK60 control (equal) and CO<sub>2</sub> fire extinguishing system.

NOTE: The availability of all components shall be guaranteed for a minimum period of 10 years.

### **iii. Specification**

#### **a) INTENT**

The specification is intended to cover the complete installation of the generator plant. The minimum equipment requirements are outlined, but do not cover all the details of design and construction. Such details are recognised as being the exclusive responsibility of the contractor.

In all cases where a device or part of the equipment is referred to in the singular, it is intended that such reference shall apply to as many devices as are required to complete the installation.

#### **3.4. STANDARDS AND CODES**

All work and equipment shall be in accordance with the requirements of BS5514 and shall comply with the Occupational Health and Safety Act, No 85 of 1993 and current regulations of all other codes applicable to this work.

### **iv. Specification For Self-Contained Automatic Diesel Alternator Set**

## **SECTION 1: INDEX**

- 1. INTRODUCTION
  - 1.1 Purpose
- DOCUMENT CONTENTS
  - 2.1 General
  - 2.2 Certificate of Compliance
- 3. INSPECTION
- 4. ENGINE REQUIREMENTS
  - 4.1 Sizing
  - 4.2 Type
  - 4.3 Starting
  - 4.4 Cooling System
  - 4.5 Lubrication
  - 4.6 Bearings
  - 4.7 Speed
  - 4.8 Governor
  - 4.9 Service and Power Rating
  - 4.10 Diesel – Fuel / Water Separator
  - 4.11 Fuel -Control
  - 4.12 Air Filter
  - 4.13 Engine Generator / Alternator
  - 4.14 Temperature Detector



- 4.15 Oil Pressure Detector
- 4.16 Magnetic
- 4.17 Accessories
- 4.18 Finish
- 4.19 Spares

5. ALTERNATOR REQUIREMENTS

- 5.1 General
- 5.2 Capacity
- 5.3 Construction
- 5.4 Protection / finish
- 5.5 Electrical Characteristics
- 5.6 Load
- 5.7 Waveform
- 5.8 Efficiency
- 5.9 Short Circuit
- 5.10 EMC
- 5.11 Excitation Systems
- 5.12 Automatic Voltage Regulator (AVR)

6. BASE REQUIREMENTS

- 6.1 Type
- 6.2 Anti-vibration Mountings
- 6.3 End Stops
- 6.4 Construction
- 6.5 Finish

7. SET REQUIREMENTS

- 7.1 Configuration
- 7.2 Guards
- 7.3 Noise and Vibration
- 7.4 Steel Cabinet

8. DIESEL TANK REQUIREMENTS

- 8.1 General
- 8.2 Capacity
- 8.3 Construction
- 8.4 Diesel Level Indicator
- 8.5 Transfer pump and associated float switches
- 8.6 Bulk Fuel Tank

- 8.7 Day tank alarms
- 8.8 Accessories
- 8.9 Finish

## 9. CONTROL-EQUIPMENT REQUIREMENTS

- 9.1 Design
- 9.2 Mimic Display
- 9.3 Software
- 9.4 Communication Interface
- 9.5 Control Selector
- 9.6 Monitors
- 9.7 Timers

## 10. METERS

- 10.1 General
- 10.2 DC Voltmeter

## 11. CONTROL CUBICLE

- 11.1 Automatic Voltage Regular (AVR)
- 11.2 Starter / Control Battery Charger
- 11.3 Battery
- 11.4 Alarm / Status Indicators
- 11.5 Wiring
- 11.6 Alternator Circuit-Breaker (ACB)
- 11.7 Emergency Stop-button
- 11.8 Remote stop / Start Control
- 11.9 Switchgear and mains bypass switch
- 11.10 Switchgear
- 11.11 Bypass requirements
- 11.12 Miscellaneous
- 11.13 Service
- 11.14 Spares
- 11.15 Insulation Resistance
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- 12.1 General
- 12.2 Design
- 12.3 Roof
- 12.4 Lamp fittings
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- 12.6 Cable entries
- 13. INPUT AND OUTPUT TERMINALS
- 14. SENSING TERMINALS
- 15. AUTOMATIC CO2 FIRE EXTINGUISHER SYSTEM
- 16. BUSBARS AND OUTPUT CABLES
- 17. FIXING OF AUXILLIARY EQUIPMENT
- 18. HANDBOOKS AND DRAWINGS
  - 18.1 Engine and Alternator Handbooks
  - 18.2 Control Cubicle Handbooks
  - 18.3 Drawings
  - 18.4 Basis of provision
- 19. MAKER'S TEST
- 20. MARKINGS AND LABELLING
- 21. DELIVERY
- 22. TECHNICAL ASSISTANCE
- 23. GUARANTEE
- 24. OCCUPATIONAL HEALTH AND SAFETY ACT (OHASA)
- 25. ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)
- 26. REFERENCES
- 27. LIST OF PARTICULAR REQUIREMENTS
- 28. TECHNICAL SCHEDULE OF INFORMATION

## **SECTION 2: DEFINITIONS AND ABBREVIATIONS**

In these Regulations any word or expression to which a meaning has been assigned in the Act shall have the meaning so assigned and, unless the context otherwise indicates:

<b>“pF”</b>	means power factor.
<b>“dc”</b>	means direct current.
<b>“ac”</b>	means alternative current.
<b>“AVR”</b>	means automatic voltage regulator.
<b>“Sec”</b>	means seconds.
<b>“ACB”</b>	means alternator circuit breaker.

### **1. INTRODUCTION**

#### **1.1 Purpose**

This standard covers the requirements for a self-contained automatic starting diesel alternator set, which shall operate either as a prime mover or standby. A weatherproof canopy with soundproofing shall be provided.

### **2. DOCUMENT CONTENTS**

#### **2.1 General**

(a) All details, dimensions and instructions shown on any drawings, diagrams and specifications quoted, shall be taken as forming part of this standard. If there is any discrepancy between drawings and standards, the standard shall be followed.

(b) This standard indicates the special minimum requirements of the municipality where no specific requirement is indicated or where “not applicable” is indicated under a heading, it does not relieve the manufacturer or supplier or tenderer of any statutory or common law duty and the manufacturer or supplier or tenderer will comply with any requirements or standards from any statutory body for the specific product.

(c) The successful tenderer shall supply to Mnquma Local Municipality, a complete set of mechanical and electrical drawing.

(d) It is a condition of tender that the use of non-approved manufacturing facilities and/ or subcontractors is not allowed.

#### **2.2 Certificate of Compliance**

- (a) The tenderer shall indicate, section by section, whether or not the quotation complies in every respect within this requirement.
- (b) The tenderer must clearly indicate to what and to what extent does his offer comply, merely stating comply is not acceptable.
- (c) Full compliance sheets shall be submitted for companion standards referenced in this standard. (i.e. Engine, Alternator and controller)
- (d) The tenderer shall not refer to any attached manuals, pamphlets or data sheets. (Manuals and pamphlets may be used to amplify statements)
- (e) If alternative quotations are submitted, all divergences from this requirement shall be clearly stated, along with a motivation for offering the alternative.
- (f) A separate compliance certificate shall be submitted for each alternative offer.

### **3. INSPECTION**

- (a) The contractor shall prove that a quality assurance system in accordance with the International standard ISO 9001 is available to the manufacturer and sales representative of the diesel alternator.
- (b) Mngquma Local Municipality reserves the right to arrange for the inspection of all goods forming the subject of any contract or order, at any stage before final acceptance and by any means it may deem necessary. When such inspection is to be carried out, the relevant contracts, orders and suborders shall be endorsed accordingly.
- (c) When inspection at the Contractor's work or warehouse is specified, Mngquma Local Municipality's authorised inspector shall have free access to the premises of the Contractor at all times during working hours, shall have the liberty to inspect work which is the subject of the contract or order, at any stage of manufacture, and may reject any goods which are found to be incomplete, defective or in any way not in conformity with the terms of the contract or order. The Contractor shall afford all reasonable facilities for such access and inspection.
- (d) The contractor shall supply without charge to Mngquma Local Municipality all tools, gauges, templates and other equipment which may be required for checking the accuracy of the work and shall provide the labour necessary for inspecting the work in accordance with requirements specified in the contract or order and shall render all reasonable assistance in carrying out this checking and inspection.
- (e) The contractor shall be able to do all witnessed tests and/or training in South Africa. Any requirements for overseas visits shall be to the contractors account. Mngquma Local Municipality shall not be responsible for funding overseas visits nor shall such be included in the price of the system.

### **4. ENGINE REQUIREMENTS**

#### **4.1. General**

The engine must comply with the requirements as laid down in BS 5514 and must be of the atomised injection, compression ignition type, running at a speed not exceeding 1500rpm. The engine must be amply rated for the required electrical output of the set, when running under the site conditions. The starting period for either manual or automatic switching-on until the taking over by the generating set, in one step, of a load equal to the specified site electrical output, shall not exceed 15 seconds. This must be guaranteed by the Tenderer.

Turbo-charged engines will only be accepted if the Tenderer submits a written guarantee that the engine can deliver full load within the specified starting period

#### **4.2. Rating**

The set shall be capable of delivering the specified output continuously under the site conditions, without overheating. The engine shall be capable of delivering an output of 110 % of the specified output for one hour in any period of 12 hours consecutive running in accordance with BS 5514.

#### **4.3. De-Rating**

The de-rating of the engine for site conditions shall be strictly in accordance with BS 5514 of 1977 as amended to date. Any other methods of de-rating must have the approval of Mngquma Local Municipality and must be motivated in detail. Such de-rating must be guaranteed in writing and proved by the successful Tenderer at the site test.

##### **4.3.1. SIZING**

- (a) The engine shall be at 701 meter above sea level.

- (b) The shaft output of the engine on continuous kW output divided by 0.8 pF multiplied with the alternator efficiency shall be equal or greater than the required kVA output.
- (c) The engine technical data with the derating graphs on altitude of each engine shall be supplied with the tender and shall be part of the engine sizing.

#### 4.3.1. TYPE

- (a) The engine shall be a diesel fuelled, cold starting liquid-cooled, compression ignition, direct injection industrial type as complying with BS 5514 Part 1-5 as amended.
- (b) The engine shall be amply rated for the site electrical output, load characteristics and power factor specified in the schedule of requirements. The derating of the engine for site conditions shall be strictly in accordance with BS 5514 Part 1-5 as amended to date and shall be guaranteed by the successful tenderer.
- (c) The output of the engine under the specified site conditions shall be the nett available output after allowance for all auxiliary equipment, including air filter, radiator fan, oil pump, water pump, battery-charging alternator, governor, etc. has been made.
- (d) Turbo-charged engines will only be accepted if the tenderer provides a written guarantee that the engine can deliver full load within the specific starting period and provide details of load acceptable characteristics together with proof.
- (e) Turbo-charged engines must have a run down time of at least 5 minutes at no-load speed before shut down.
- (f) Engines equipped with emission control will be preferred.

#### 4.4 Starting

- (a) The engine shall be equipped with an electric starting motor that is readily available in the Republic of South Africa.
- (b) The starting period of the generating set from either automatic or manual switching until the taking over of the generating set of load of at least 50% of its rated output shall not exceed 15seconds.

#### 4.5 Cooling System

- (a) The cooling system shall be thermostatically controlled entirely self-contained and shall consist of a radiator, fan and circulating pump.
- (b) Radiators shall be heavy-duty air-blast tropical type pressurised radiators adequately sized for continuous full load operation of the set and shall be fitted with a water level sensor equal or similar to Murphy 1 – 150 float gauge type.
- (c) The capacity of the fan shall be sufficient to provide the required engine cooling and plant room ventilation.
- (d) The manufacturer shall indicate the method of driving the fan, i.e. whether it is by mechanical coupling to the engine or by means of an electric motor.
- (e) A 220V ac electric heater or heaters with an adjustable thermostat shall be fitted to the engine to maintain the cooling system at a suitable temperature for cold-starting. Jacket-heating is to be used with an alarm operated when not operational. Ball valves shall be fitted to the flow and return pipes of the heater. The heater connection shall be brought out to a separate terminal strip.

#### 4.6

- (c) A label indicating the grade of oil and frequency of oil changes shall be affixed to the engine.
- (d) An automatic LUBRICATION

- (a) The engine shall have a forced-feed lubrication system adequately rated to supply circulating lubrication oil to all bearings, gear trains and important moving parts.
- (b) A lubricating oil-filter of adequate capacity for at least 250h of continuous use shall be fitted. lubricating-oil level control system shall not be supplied unless called for in the enquiry documents.
- (e) A recognised automatic turbo-lubrication system to be incorporated for turbo-charged engines.
- (f) A ball valve with a flexible hose shall be fitted to the bottom of the sump.

#### **4.7 BEARINGS**

- (a) All continuous rotating engine parts not pressure-lubricated shall operate in sealed ball or roller bearings.

#### **4.8 SPEED**

- (a) The engine shall operate at a nominal speed of 1 500 r/min only.

#### **4.9 GOVERNOR**

- (a) A governor shall be fitted to comply with Class G2 governing in accordance with ISO 8528-5 1993. Single load step shall be done on 100% of the specified load. Where mechanical governing is not suitable for the above electronic governing shall be used.
- (b) Documentary compliance of the engine supplier shall be supplied with the tender.

#### **4.10 SERVICE AND POWER RATING**

- (a) The engine shall be selected for a 1 000 h continuous power condition, unless otherwise stated, such that its capacity is adequate to drive the associated alternator and accessories continuously at rate output at an altitude of 701m, air temperature of 29.4°C and relative humidity of 50%.
- (b) The engine shall be compatible with 5.6

#### **4.11 DIESEL-FUEL FILTER / WATER SEPARATOR**

- (a) A water and fuel separator shall be fitted before the supply pump to filter the input fuel to the engine. Flexible hoses shall be used for connections to the input and output. The water drain must be connected to an external outlet

#### **4.12 FUEL CONTROL**

- (a) A fuel control solenoid shall be fitted and shall be rated for continuous operation. The solenoid shall be energised for the full period that the engine is running. The controller shall not operate with more than two mechanical links.
- (b) The main fuel line to the Diesel engine shall be equipped with a fire resistant shut down valve sim to the Crane Haby gate valve operated by a fuse type or similar fire detector to close off the fuel supply in the event of a fire. Rubber or other material, which is not fire or fuel proof, is not acceptable.

#### **4.13 AIR FILTER**

- (a) An air cleaner of the dry-element type shall be fitted with air flow restriction indication. On turbo charged engines the air intake shall be protected while travelling.

#### **4.14 ENGINE GENERATOR / ALTERNATOR**

- (a) The engine shall be equipped with a charging generator / alternator of suitable voltage with current rating not less than 30 amps to charge the starter battery.
- (b) The generator / alternator shall be fitted with a regulator to maintain the starter battery at the correct voltage in accordance with the battery supplier's requirement.
- (c) The generator / alternator shall be readily available in the Republic of South Africa.
- (d) A centre-zero dc ammeter shall be connected in the generator / alternator starter battery circuit to indicate the charge or discharge current.
- (e) Short circuit protection must be provided between the generator / alternator and the battery.
- (f) A dc ammeter is required in the output of the generator to the battery; the ammeter shall be calibrated from 0–30 amps.

#### **4.15 TEMPERATURE DETECTOR**

- (a) The engine shall be equipped with a temperature detector similar or equal to VDO (analogue).  
**Note:** Automotive type temperature sensors are not acceptable and the engine must be fitted with suitably rated, normally closed, fail-safe snap-action sensors compatible with solid state controls.

#### **4.16 OIL PRESSURE DETECTOR**

- (a) The engine shall be equipped with an oil pressure detector similar or equal to VDO (analogue).
- (b) The engine shall be fitted with an oil pressure relay that shall operate when the lubricating oil pressure falls below the engine manufacturer's stated safe value.
- (c) The engine shall be fitted with an oil pressure sensor that shall be extended to the controller. **Note:** Automotive type oil sensors are not acceptable and the engine must be fitted with suitably rated, normally closed, fail safe snap action sensor compatible with solid state controls.

#### **4.17 MAGNETIC PICKUP**

- (a) Engine's without electronic governors shall be equipped with a magnetic pickup compatible with the controller.

#### **4.18 ACCESSORIES**

The following accessories shall be supplied with engines used in sets without enclosure:

- (a) An efficient residential type silencer.
- (b) Stainless steel flexible exhausts tubing similar to (or equal) Donaldson that shall be clamped and not welded to the exhaust system.
- (c) Sufficient brackets and clamps to support the exhaust system.
- (d) Suitable temperature resistant material shall be provided to cover all the exhaust pipes and silencer, EXCLUDING flexible tubing.
- (e) Radiator cowling if called for.

#### **4.19 FINISH**

- (a) The engine colour shall remain the original colour as supplied by the manufacturer. The fan and blades shall be painted orange.



- (b) All silencers, fittings etc. shall be painted before lagging with heat-resisting aluminium.
- (c) The exhaust cowling shall be manufactured of galvanised sheet-steel unless otherwise specified.
- (d) Rubber hoses used on the water, lubricating oil or fuel systems and rubber belts shall not be painted.
- (e) All fuel-lines before the cut off valve shall be fireproof.
- (f) The outside exhaust system shall be manufactured out of stainless steel.

#### **4.20 SPARES**

- (a) The following specific spares shall be supplied
  - i. Lubricating-oil filter elements
  - ii. Fan belt
  - iii. Diesel fuel filter elements
  - iv. Air filter

### **5. ALTERNATOR REQUIREMENTS**

#### **5.1 GENERAL**

- (a) The alternator shall be brush less and shall comply with the relevant part of SABS ISO 8528-3
- (b) One or more lifting eyes shall be provided.
- (c) The nominal speed shall be 1 500 r / min with a frequency of 50 Hz of maximum deviation of 5%.
- (d) The alternator shall be protected against failure due to low speed operation.

#### **5.2 CAPACITY**

- (a) The output capacity of the alternator shall not be less than 110% as called for in the tender documents

#### **5.3 CONSTRUCTION**

- (a) The alternator shall be protected to "IP 23" or better as defined in BS 4999 Part 20.
- (b) The alternator cooling shall be in accordance with "IC 01" as defined in BS 4999 Part 21.
- (c) The alternator shall be to class 'H' insulation.
- (d) The alternator shall be a brush less 2/3 pitch low harmonic, 4 pole type, to class "F" temperature rise, that complies with the relevant requirements of IEC 34-9, SABS IEC 34-1, SABS IEC 34-8 and ISO 8528-3
- (e) MNQUMA Local Municipality may make random checks of the alternators offered and if called for, on any item, the tenderer will provide the transport and handling of items allocated for delivery to the Bureau of Standards
- (f) Only single bearing alternator shall be supplied. Torsional tests and/or certificates shall be supplied with the engine and alternator combination when requested.
- (g) The alternator transport bracket shall be supplied with each set and shall be fixed on a safe place to the set.
- (h) The alternator shall be equipped with sealed ball or roller bearing capable of operating for at least 720 hrs without attention.
- (i) The alternator shall comply with the vibration test requirements specified in BS 4999 Part 50.

#### **5.4 PROTECTION / FINISH**

- (a) Main output terminals, auxiliary terminals, static semi-conductors, resistors etc. to be mounted in clean area metal terminal box on the alternator frame.
- (b) All metal components must be subjected to a pre-cleaning operation to remove grease, dirt, rust etc. prior to the application of a good red oxide primer paint.

- (c) The alternator shall be paint red to shade A11 of SABS 1091.
- (d) All windings must be protected from adverse operating conditions (i.e. high humidity, diesel mist, dirt, abrasive dust etc. (e.g. VPI or trickle impregnation).

## **5.5 ELECTRICAL CHARACTERISTICS**

### **5.5.1 Phase**

- (a) The number of phases shall be as called for in the tender documents.
- (b) In the case of three-phase machines, the alternators shall be wired for 4-wire operation, each phase being brought out separately onto a terminal block.

### **5.5.2 VOLTAGE**

- (a) Three-phase: 400V, single phase: 230V unless otherwise stated.

### **5.5.3 VOLTAGE REGULATION FOR BALANCED 3-PHASE LOADS**

- (a) The alternator shall be AVR controlled.
- (b) The voltage shall be maintained to within  $\pm 10\%$  of nominal (5.5.2) over the range from no-load to full-load, at unity and 0.8 p.f. lag inclusive of cold to hot drift and inclusive of engine speed drop up to 4.5%
- (c) The alternator shall be capable of operating continuously with a load current unbalance between phases of 100% at both unity and 0.8 p.f.
- (d) The efficiency of the alternator shall be supplied at 0.8 p.f.

## **5.6 LOAD**

- (a) The alternator shall be capable of sustaining, without harm a load of 110% for one hour in every twelve hours at 29.4°C and 50% relative humidity.

## **5.7 WAVEFORM**

- (a) A good sinusoidal waveform free of slot ripple is essential. At no-load the waveform distortion shall be less than 2%. At full load unity and 0.8 p.f. lag linear loads the total waveform distortion shall be less than 5% with no individual harmonic exceeding 3%. The maximum waveform distortion of the alternator voltage when supplying 70% non-linear load shall not exceed 15% where the rms value of the harmonic current for any individual harmonic will not exceed the value given by the following equation:  $i_1/n$  where  
 $n$  = rms value of the  $n$  th harmonic current and  $i_1$  = rms value of the 50 Hz current.

## **5.8 EFFICIENCY**

- (a) The efficiency of single-phase alternators shall be better than 70%. The efficiency of 3-phase alternators shall be better than 85% for machines with a capacity greater than 16 kW. The above conditions shall apply at full load, nominal voltage and 50 Hz at a load power factor of 0.8 lagging.

## **5.9 SHORT CIRCUITS**

- (a) The alternator shall comply with BS 4999 Section 40.5 in respect of sudden short circuits.
- (b) The design of the alternator and regulator system shall be such that it will maintain machine excitation for a period of 10 seconds at a rating of 300% to clear protection circuits, under the following conditions:
  - i. Any phase to phase short-circuit.
  - ii. Any phase to neutral short-circuit.

- iii. Any phase to phase to neutral short-circuit (double earth-fault)
- iv. Three phase to neutral short-circuit
- (c) The alternator and voltage regulator components shall be protected against voltage transients induced by switching or lighting surges. The requirements laid down in SABS IEC 60664-1 category 1 shall be adhered to.

#### **5.10 EMC**

- (a) The equipment shall be certified (not necessarily tested) by SATRA to comply with EMC radio regulations made under Section 95 of the Telecommunications Act. For this purpose, the tenderer, supplier or manufacturer shall supply a complete test report / certificate of EMC from the SABS. If the equipment carries the CE mark the equipment will be accepted. Mquma Local Municipality reserves the right to cancel tenders awarded to suppliers or manufacturing if the equipment is found not to comply with the EMC standards or regulations.

#### **5.11 EXCITATION SYSTEM**

- (a) Tenderers may offer single phase or three-phase sensing regulator system which take their input supply from either an auxiliary winding contained with the alternator or from a directly coupled permanent magnet pilot exciter; shunt connected AVR's will not be considered.
- (b) The voltage regulating system shall monitor average values and not peak.

#### **5.12 AUTOMATIC VOLTAGE REGULATOR (AVR)**

- (a) The AVR shall be mounted in the control cubicle.
- (b) A suitable terminal strip to terminate the wires to and from the AVR shall be provided on the alternator, preferably on the plug-in socket type.
- (c) All components must be accessible and replaceable.
- (d) The AVR shall be protected against failure due to low speed operation.
- (e) All components must be approved to BS 9000, or MIL standards. Alternatives will be considered on submission to Mquma Local Municipality.
- (f) The AVR shall be one of the electronic types of the three phase sensing type.

### **6. BASE REQUIREMENTS**

#### **6.1 Type**

- (a) The base construction shall only be the full duplex type. The engine and alternator shall be mounted on full frame inner base, which will fit in an outer base frame with anti-vibration mountings fitted between the inner and outer frame.
- (b) Simplex frames will only be considered for skid mounted sets with a capacity of greater than 600 kVA, unless otherwise stated.

#### **6.2 ANTI-VIBRATION MOUNTINGS**

Novibra fail safe anti-vibration mountings shall be provided between the inner and outer frames.

#### **6.3 END STOPS**

End stops for locking the inner frame in position during transport shall be provided.

#### **6.4 CONSTRUCTION**

- (a) Each set shall comprise a diesel engine and an alternator mounted on the inner frame of a duplex base.
- (b) All metalwork for inner and outer base frames, plus the framework for the engine set, shall be constructed of suitably strengthened channel iron.

- (c) Provision shall be made on the base to lift the complete set for transportation purposes and positioning. Lifting eye shall be fitted to the outer base frame of all sets and shall be correctly balanced.
- (d) The base construction shall be such that when the complete set with canopy is mounted on it shall carry the total mass of the set and canopy without being deformed when lifted.
- (e) The construction shall be as such that the alternator or the engine easily be removed.
- (f) The engine shall be supported in such a way that the alternator can be removed without the need to temporary support the engine.
- (g) The base construction shall be such that sufficient space exists for draining off the engine oil.
- (h) The base construction shall be such that it will support and hold the enclosure in position during transportation and service on site.
- (i) For skid mounted sets suitable drip trays shall be provided.
- (j) The base of canopy sets shall be completely sealed and a drain-plug provided at its lowest point. A label indicating the drain-plug shall be fitted.

## **6.5 FINISH**

- (a) All the metal work shall receive a finishing process consisting of degreasing; rust-proofing followed by a double wash dip and forced air drying. Alternatively, shot blasting and an epoxy powder coating process may be used.
- (b) The paint thickness shall be not less than 0.025mm.

## **7. SET REQUIREMENTS**

### **7.1 Configuration**

- (a) The tenderer shall guarantee that the Diesel / Governor and alternator / A.V.R. combination will be compatible with the exchange loads which can consist of a combination of transducer and / or thyristor controlled rectifiers and UPS systems etc. This shall be a condition of tender.

### **7.2 Guards**

- (a) All moving and rotating parts such as belts, couplings and fans shall be protected by suitable guards to prevent accidental injury to personnel.
- (b) Guards shall be fitted to all engines with side-mounted exhaust manifolds.

### **7.3 Noise and vibration**

- (a) The engine / alternator combination shall be arranged to run free from excessive vibration and noise under all conditions of load and speed.
- (b) The vibration amplitude shall not exceed the limits laid down in BS 4999: Part 50

### **7.4 Steel cabinet**

- (a) A separate lockable wall-mounted steel cabinet to house a minimum of two of each of the filter elements indicated in 4.19 shall be provided with each set called for. A metal jacket shall be provided on the inside of the door of canopy sets to hold the various manuals and drawings associated with each set. Under a requirement for a mobile unit the cabinet shall form part of the set.

## **8. DIESEL TANK REQUIREMENTS**

### **8.1 General**

- (a) A service diesel tank shall be provided as required in this standard.

## **8.2 Capacity**

- (a) The capacity of the service diesel fuel tanks for sound proof sets which will be installed inside the canopy shall not be less than 250 litres for building rated at 60 kVA, unless otherwise stated.
- (b) The capacity of the service diesel-fuel tanks for all sets rated above 60 kVA shall be 500 litre unless otherwise stated in the requirements accompanying this standard.
- (c) The capacity of the day fuel tanks of open sets installed in the building shall not less than 500 litres.

## **8.3 Construction**

- (a) Tanks shall be welded.
- (b) The sheet metal used in the construction of the tanks shall have a minimum thickness of 1,6 mm.
- (c) The day tank for open systems shall be supplied as floor standing unit with gravity feed to the engine and for sound canopy machines the tank shall be mounted inside with gravity feed to the engine. A ball valve shall be fitted in the bottom of the tank to drain off sludge and water.
- (d) The bottom of the tank shall slope at 1:20 towards the gate valve.
- (e) The connection point for the diesel feed pipe shall be provided in the side of the tank at 70 mm  $\pm$  10 mm from the lowest point of the tank and shall be copper or steel with high-pressure connections.
- (f) The connection point for the diesel overflow pipe shall be provided in the side of the tank at 80 mm  $\pm$  10 mm from the top. The diameter of the overflow pipe shall be twice that of the filling pipe.
- (g) The connection point for the diesel filling pipe shall be provided in the side of the tank at 50 mm  $\pm$  10 mm from the top.
- (h) The capacity of a tank, e.g. 500 litre, shall be the volume contained between the overflow pipe and the feed pipe.
- (i) All fuel piping shall be constructed of non-flammable material.

## **8.4 Diesel level indicator**

- (a) An electronic fuel level indication of the day tank level to the controller shall be supplied and shall be visible on the controller.
- (b) A visible fuel level indication (pipe type) meter shall also be installed on the outside of the day tank

## **8.5 Transfer pump and associated float switches**

### **8.5.1 Transfer pump**

- (a) An electrically driven self-priming diesel transfer pump of the gear type, capable of operating at a section head of 5 m and a delivery head of 6 m shall be provided. The pump shall be fitted above the diesel tank with an isolating switch connected.
- (b) Push-button with self-release mechanism shall be provided next to the pump for manual operation.
- (c) The transfer pump shall be capable of delivering a minimum of 300 litre of diesel per hour.
- (d) The pump shall operate both under mains and standby power conditions.

### **8.5.2 Float switches**

- (a) Where a bulk tank is provided the float switches shall be so designed that the pump motor is switched on when the diesel-fuel reserve drops to 40 % and is switched off when the diesel-fuel reserve is restored to 95 %.

## **8.6 Bulk Fuel Tank**

- (a) The tank shall comply with the requirements of SABS 0131-1 or SABS 0131-2 depending on the volume. The capacity of the tank will be specified as per requirement.
- (b) The following shall form part of the bulk fuel tank installation: -

- i. A fuel supply pipe, of diameter at least 25 mm, placed  $\pm 70$  mm from the bottom of the tank to supply the day tank, the supply pipe be fitted with a non-return valve. When copper pipes are used, it must be the heavy duty type with the pipe wall thickness of more than 1 mm. No solder or sweat joints on piping will be accepted.
- ii. An overflow return pipe from the day fuel tank of diameter at least 40 mm and placed 78 mm  $\pm 10$  mm from the top of the bulk fuel tank.
- iii. The bulk tank shall be fitted with a valve to prevent overflow.
- iv. A manual shut-off valve fitted in the supply pipe to the day tank, before the fuel transfer pumps.
- v. A fuel gauge calibrated to determine the fuel content with indication on 50%, 30% and 10% level to the controller. On 10% an alarm condition will be raised.
- vi. A hand-operated extraction pump, fitted to a drainpipe, to remove sludge and water from the bottom of the tank.
- vii. The bulk fuel tank shall be earthed in accordance to SABS 0089 1965.

## **8.7 Day tank Alarms**

- (a) Alarm contacts shall be provided and arranged to operate when the diesel reserve drops to 30 % of the tank capacity.
- (b) The alarm contacts shall be of the change-over (make and break) type.
- (c) The contacts shall be rated at 2 A dc or better.

## **8.8 Accessories**

- (a) High pressure steel or copper pipe with a flexible fire rated piece to allow movement between the engine and tank is required for connecting the tank to the engine.
- (b) A three-meter length of reinforced flexible hose, ended off in a bent metal pipe with a non- return valve to fill the tank.

## **8.9 Finish**

- (a) The tank and fuel line shall be painted with a brown colour as specified in SABS 0140.

# **9. CONTROL-EQUIPMENT REQUIREMENTS**

## **9.1 Design**

- (a) The controller capability shall be similar or equal to the LOVATO RGK60 modular genset controller. Controllers shall be pre-approved. Non-approved controllers shall not be acceptable for tender purposes.
- (b) The controller shall be manufactured with all its functions and supplied in one box with plug in termination blocks for easy installation and replacement.
- (c) The control circuit shall be designed with solid-state devices only. The definition of solid state being taken to include discrete elements such as transistors, diodes, etc. or integrated circuitry. The interface shall be implemented with relays, contactors, etc.
- (d) The control circuit shall be designed by using fully approved electronic programmable logic controllers. Preference will be given to local manufactured programmed control circuits.
- (e) It shall furthermore be possible to interchange control circuits between different capacity sets, supplied by the same manufacturer without any changes.

## **Control Panel**

The control panel shall contain the engine/alternator management and protection system, as well as the control logistics for the remote changeover switchgear. These functions shall be controlled by a dedicated

Lovato RGK60 or Deepsea microprocessor-based programmable controller.

The control panel shall also incorporate a constant voltage/current-limited battery charger of 3A capacity to maintain the starter battery's charge.

In the event of an incoming mains power failure, the plant will start up automatically, and will provide power to the remote essential power distribution panel for as long as the mains power failure lasts.

In the event of the fire extinguishing system having been activated while the engine was running, the engine shall be stopped automatically before the CO<sub>2</sub> gas is released. However if the genset is still able to run after a fire in the canopy, it shall be possible to operate the engine again by resetting the Fire STOP alarm at the

The Lovato RGK60 GENSET CONTROLLER shall be equipped with an optional GSM cellphone-type modem. This modem shall allow remote access to the GENSET CONTROLLER where the status of the plant can be remotely monitored via the cellphone network and an IBM-compatible computer equipped with a telephone modem and the necessary Lovato software. The system must also be programmed to output various status and alarm conditions by means of SMS messages to any number of designated cellphones.

#### **Protections, Alarm and Status Indications**

Provision shall be made for an acoustic as well as visual alarm device. A red flashing beacon (electronic strobe light) shall be installed on the outside of the canopy, but if required, an audible alarm device shall be provided and installed by others. This alarm device/s shall be powered from the plant's 12V starter battery. The audible alarm (if fitted) *shall* be a low-powered electronic device, in order to prevent the starter battery from being discharged when an alarm condition has been activated. The "common" alarm function shall be activated when *any* alarm condition is activated.

The acoustic alarm (electronic siren, if installed) shall be muted automatically after 60 seconds, but the flashing beacon (electronic strobe light) shall remain activated until the RESET function has been operated at the GENSET CONTROLLER.

Alarm status indications shall be provided on the GENSET CONTROLLER. The Lovato RGK60 controller shall contain a HELP menu included in the Lovato software, which will provide basic guidance in the event of any monitored alarm functions being activated. Refer to Lovato RGK60 documentation for further details.

#### **Operation**

The plant shall have three operating modes plus OFF which can be selected at the GENSET CONTROLLER.

When in an OFF mode, only the genset operation must be disabled. All auxiliary circuits and functions remain ON (heater and battery charger). Plant operation shall be completely disabled.

### **Genset Controller in MAN mode:**

The plant shall now be started and stopped manually by utilizing the respective START and STOP touch pads.

The remote power changeover switchgear shall now also be manually operated via the NET and GEN touch pads. Refer to Lovato RGK60 documentation for more information.

The manual operating mode shall be utilized for periodic testing of the engine under no-load conditions, or after the plant has been serviced or repaired.

### **Genset Controller in AUTO mode:**

This shall be Auto standby or 'normal' mode. In the event of a mains failure, the plant must start up after a 3 second delay. This delay shall be introduced to prevent spurious starting of the genset, caused by mains supply transients. During starting and run-up, engine oil pressure, and alternator output voltage and frequency monitoring, shall be blocked for a controlled period of time.

Once the blocking is released and the various operating parameters confirmed as correct, the control system must signal the remote NORMAL supply changeover breaker too motor open, followed a closing command for the remote STANDBY supply changeover breaker.

The plant shall now provide power to the essential power consumers.

After the mains supply has been restored, the plant must remain on load for a further 60 seconds, after which time it must cause the remote STANDBY supply changeover breaker to open, followed 2 seconds later by the closing of the NORMAL supply changeover breaker.

Mains power is now restored the to essential power consumers.

The plant shall now continue to run for a further 3 minutes in order to stabilize the engine and turbocharger temperatures before stopping, thereby avoiding damaging thermal stresses on the engine.

Should the mains fail during the 3 minute cool-down cycle, the system must cause an immediate changeover to STANDBY power, while resetting the cool-down cycle. After the mains has been restored, changeover back to NORMAL supply and shutdown procedures must be re-initiated as described.

### **Genset Controller in TEST mode:**

When this mode is selected, the genset must start automatically, but must not be placed on load, unless there happens to be a mains failure while running on this mode. The genset must continue to run as long as the control is left in this mode. When AUTO mode is selected, the genset must stop immediately, if the mains supply is



healthy.

**Control panel shall consist of the following:**

AC MD ammeter, DC ammeter, Batter charger, 3 pole Alternator circuit breaker, Aux contact, Current transformer, Control relay, Engine management system, Fuse carrier, Generator controller, Coolant level monitor, Control circuit breaker, Canopy light selector switch, Delay – on timer, Interval timer.

**Control Panel/General – Miscellaneous**

Alarm strobe light, Auxiliary connector top, Auxiliary connector base, 4-pin connector (top), 4-pin connector (base), 7-pin connector (F, top), 7-pin connector (M, base), Cartridge fuse, Coolant level probe, Engine heater element, Fire extinguishing system, Fluorescent lamp 9W, Fluorescent lamp 13W, Fuel level switch, Fuel pump switch, Fuel transfer pump, Luminaries c/w 12V DC, Oil pressure sender unit, Power cable terminals, Pushbutton contacts, Solenoid valve (fire system), Solenoid valve (fuel system), wire terminals.

**Mimic display**

The controller shall have a mimic display of the alternator/mains/ change over contactors/circuit breakers configuration with LED's showing the status of the mains, alternator and change over contactors/circuit breakers.

**Software**

- (a) Comprehensive control room and configuration software shall be supplied free of charge with the system.
- (b) The software shall be capable of the following functions:
  - i. Fault management (event log by date and time)
  - ii. Configuration management (software upgrades and function changes)
  - iii. Account management (energy measurement, KW, KVA, PF)
  - iv. Performance management (set point changes)
  - v. Security management (passwords)

**Communication interface**

- a. The controller will have a standard RS 232/485 or Ethernet interface suitable for TCP I/P transport medium.
- b. All communication including configuration management shall be done through this port. The use of external program adaptors etc. will not be acceptable.
- c. The controller shall incorporate the following functions:

- i. Mains sensing
- ii. Alternator output-voltage sensing
- iii. Alternator over-frequency sensing
- iv. Control of processor unit (self-diagnostics)
- v. Alarms/Status indications.
- iv. Control selector and operation

## 9.5 Control selector

- a. A 4-position control-selector on the controller shall be provided to facilitate the following modes of operation:

<b>OFF</b>	: Diesel/alternator set switched off
<b>MANUAL</b>	: Mains bypassed: Diesel/alternator shall not take load
<b>AUTO</b>	: Diesel/alternator takes load on mains failure
<b>TEST</b>	: Diesel/alternator takes load on mains failure

## 9.6 Monitors

### 9.6.1 Mains voltage and frequency monitors

- a. A software mains voltage monitor shall be provided. (No external hardware monitors will be accepted)
- b. When the voltage of the incoming mains varies by more than a preprogram value (default  $\pm 10\%$ ) from the normal voltage on any phase, the controller shall signal that the incoming mains must be disconnected and the engine-starting sequence initiated.
- c. A software mains frequency monitor shall be provided.
- d. When the frequency of the incoming mains varies by more than a pre-program value (default  $\pm 5\%$ ) from the normal frequency, the controller shall signal that the incoming mains must be disconnected and the engine-starting sequence initiated.
- e. Upon restoration of the incoming mains to within the pre-program value (default  $\pm 10\%$ ) of the normal voltage on all phases, the monitor shall signal that the load must be disconnected from the alternator and reconnected to the incoming mains.
- f. If the alternator has been disconnected from the load and the incoming mains are within the voltage limits of  $+ 10\%$  on all phases, the controller shall signal that the load must be reconnected to the incoming mains.
- g. Should the incoming mains fail or not be in the specified limits while the engine is running under control of the cooling-off timer, the control for the cooling-off timer in the controller shall be cancelled and the load connected to the alternator.

### 9.6.2 Alternator voltage and frequency monitor

- a. **A software alternator voltage monitor shall be provided. (No external hardware monitors will be accepted)**
- b. **When the output voltage of the alternator varies by more than the pre-program value (default value  $\pm 10\%$ ) on ANY phase, the controller shall signal that the load must be disconnected from the alternator and the engine stopped.**
- c. **A software over and under-frequency monitor shall be provided in the controller if the frequency exceeds or drop below pre-programmed values. It shall meet the requirements of class G2 governing. The monitor shall not be influenced by harmonics.**

## **9.7 Timers**

- a. All timers shall be implemented in software; no external hardware timers will be accepted.

### **9.7.1 Incoming supply failure timer**

- a. It is essential that incoming supply failures, occurring at short intervals, do not cause a series of starts and stops.
- b. A timer adjustable from 1 s to 10s is required.
- c. The timer default value shall be set to 3 s
- d. The signal generated by the mains voltage monitor (0 refers) shall start the timer. If the duration of the signal is less than the setting on the timer, the signal is suppressed so that the switching and starting sequence is not initiated. However, if the duration of the signal is more than the setting on the timer, the signal shall be transmitted to initiate the switching and starting sequence.

### **9.7.2 Incoming supply restoration timer**

- a. It is essential that incoming supply restorations occurring at short intervals do not cause a series of stops and starts.
- b. A timer, adjustable from not less than 5 sec to not more than 150 sec is required
- c. The signal generated by the mains-voltage monitor (9.6.1) shall start the timer. If the duration of the signal is less than 150 sec, the signal is suppressed and the timer is reset. However, if the duration of the signal is more than 150 sec, the signal shall be transmitted to initiate the switching sequence.

### **9.7.3 Alternator supply/incoming supply change-over timer**

- a. It is essential that the supply be disconnected from the load before the incoming supply is reconnected to the load. This must be software settable in the controller with a minimum of 5 seconds and a maximum of 20 seconds.
- b. On receipt of the switching signal (9.6.2. refers), the alternator supply shall be disconnected from the load and the timer started. After 5 sec, the incoming supply shall be reconnected to the load.

#### **9.7.4 Engine cooling-off timer**

- a. After the load has been transferred to the incoming supply the engine shall run without load for a period to cool off and then stop.
- b. A timer, software adjustable in the controller up to 5 min is required

#### **9.7.5 Repeat-start control**

- a. A repeat-start control is required in the controller software adjustable so that in the event of the engine failing to start on the first start attempt, the starter motor shall be released and repeat the start attempt.
- b. The repeat-start attempt shall be repeated 3 times.
- c. The duration of each start attempt shall be 6 sec with a period of 15 sec between successive start attempts.
- d. Should the engine fail to start after the third start attempt, the controller shall transmit a signal for alarm purposes

### **10. METERS**

#### **10.1 General**

- a. All metering shall form part of the controller software and shall be accessible on the controller software.
- b. Mains and alternator measurements shall be done by the controller.

#### **10.2 DC voltmeter**

- a. The starter battery voltage shall be software monitored by the controller. The voltage shall be digitally displayed.

### **11. CONTROL CUBICLE**

- a. The control equipment shall be housed in a sturdy cubicle manufactured from sheet steel with a minimum thickness of 2mm.
- b. The control cubicle shall be mounted on the set.
- c. Access to the cubicle shall be such that all components can be conveniently reached for testing and maintenance purposes.
- d. The necessary bushes and a screen over the terminals shall be provided where the power feeds enter and leave the cubicle.
- e. The cubicle shall be so constructed that the ac and dc components are screened from one another.
- f. The cubicle shall be vermin-proof with proper ventilation provided.
- g. If doors are provided, the minimum opening angle shall be 90° at all times.
- h. Suitable dust proofing rubbers shall be fitted (minimum thickness of 6 mm).
- i. All holes, slots etc. shall be pre-drilled and pre-cut before any spray-painting is done. Touch-up work due to negligence shall be rejected.

- j. A lamp fitting and its associated on/off door switch or a switch with a variable time delay shall be fitted inside the control cubicle for illumination of the control panel. The power for the lamp shall be obtained from the starter battery. This shall be provided on all engine sets in the tender.

#### **11.1 Automatic voltage regulator (AVR)**

- a. The AVR shall be mounted in the control cubicle.

#### **11.2 Starter/control battery charger**

- a. A solid state mains battery charger in parallel with the engine driven generator is required, to float and maintain the battery voltage between 2,23 V and 2,30 V per cell and shall be suitable to charge the battery in accordance with the battery manufacturer's recommendations.
- b. The charger shall be of the constant voltage type with automatic and inherent current limiting features.
- c. The output of the charger shall be limited to 5 A fitted with an alarm to the controller when not operational.
- d. The input of the charger shall be connected to the incoming mains or load side if the set is used as a prime mover.
- e. Sealed or encapsulated units are not acceptable
- f. A loss-of-charge current alarm shall be provided to the controller to indicate failure of the mains charger. This shall be a current monitor. A delay period of 1 min must be allowed in the controller before the alarm is triggered.
- g. A dc ammeter is required in the output of the starter/control battery charger.
- h. The ammeter shall be calibrated from 0 A to 10 A.

#### **11.3 Battery**

- (a) A battery suitable for continuous float charge operation at a maximum charge voltage of 27.6 for 24 volt systems and 13.8 for 12 volt systems shall be provided with each set.
- (b) The minimal voltage after the final start attempt shall not fall below 75% of nominal voltage.
- (c) Only maintenance free batteries will be considered and shall be of the Odyssey range from Hawker or similar. The model number shall be supplied with your tender.
- (d) The battery offered shall be suitable to operate between 0°C -48°C.
- (e) The life expectancy of the battery under the above operating conditions must be 8 years with a three-year full warranty plus two year prorata. (Guarantee available from Battery Technologies)
- (f) The battery shall be date stamped with the year and month of manufacturing.

#### **11.4 Alarm/Status indications**

- a. The following alarm/status indications shall be displayed by the controller:
  - i. High engine temperature.
  - ii. Low Oil pressure
  - iii. High/low alternator output voltage
  - iv. Over and under speed (frequency)

- v. Low water level
- vi. Emergency stop activated
- vii. Mains fail
- viii. Battery charger fail
- ix. Dummy load in operation
- x. Unit in Auto
- xi. Engine running
- xii. Low fuel alarm
- xiii. Engine start failure
- b. Conditions one to six shall stop the engine.
- c. All alarm/status indications, open circuit when on, shall be extended to a terminal strip to allow for remote control and monitoring.
- d. A remote start facility shall be supplied software controllable in the controller.

## **11.5 Wiring**

### **11.5.1 Cabling**

- a. Cabling connected to incoming or outgoing circuits shall be terminated on the gland type plate supplied for this purpose. Power cables up to and including 70 mm may terminate on clamp type terminals where the clamping screws are not in direct contact with the conductor. Connection to the equipment can then be made with cables that are similarly connected to the clamp terminal. All power cables larger than 70mm<sup>2</sup> shall terminate on busbars that are connected to the associated equipment. Parallel incoming or outgoing cables shall be connected to a collector busbar without crossing the conductors.
- b. All wiring on the engine set shall be protected by flexible conduit of a non-flammable material.
- c. Wiring carrying mains voltage which is exposed and is dangerous to human shall be covered with boots on the of point termination.

### **11.5.2 Terminal strips**

- a. External wiring for low voltage, control, interlocking, alarm, measuring and D.C circuits shall terminate on numbering wiring terminals of the insulation displacement type similar to the Krone or Entrelec ADO 1.5 mm wire gauge din rail mounting type.
- b. The correct terminal size as recommended by the manufacturer for each conductor to be connected shall be used throughout.
- c. All connections to terminals shall be identified by wire identification labels.
- d. The terminal numbers shall appear on the wiring diagrams of the switchboard.
- e. Terminals for internal wiring shall not be interposed with terminals for external circuits.
- f. Where switchboards consist of separate sections, the control wiring passing between sections shall be terminated on strips in each section so that control wiring can be readily re-instated when reassembling the board.
- g. Terminals for power wiring shall be separated from other terminals.

### **11.5.3 Current ratings**

- a. The current rating of conductors for the internal wiring shall be sufficient for the maximum continuous current that can occur in the circuit. This value shall be determined from the circuit-breaker or fuse protection of the circuit.
- b. Standard 600/1 000 V grade PVC-insulated stranded annealed copper conductors to SABS 1507 shall be employed for the internal power wiring of switchboards. The smallest conductor size to be used for power wiring in switchboards shall be 2,5 mm<sup>2</sup>. Flexible cord of minimum size 1,0 mm<sup>2</sup> may be used for control wiring.
- c. All exposed cables, except earth conductors, in sound-proof canopy sets and where heat generating equipment is present and the internal temperature of the board is likely to exceed 50 °C, silicon-rubber insulated stranded conductors shall be used.
- d. Wiring shall be arranged in horizontal and vertical rows and shall be bound with suitable plastic straps or installed in PVC wiring channels. Under no circumstances may PVC adhesive tape be used for the bunching of conductors or for the colour identification of conductors.
- e. Bunched conductors shall be neatly formed to present a uniform appearance without twisting or crossing the conductors. Conductors leaving the harnesses shall be so arranged that they are adjacent to the chassis.
- f. Conductors to hinged panels and doors shall be secured on both the door and the frame and shall be looped between the two points. The loop shall be arranged to produce a twisting motion when the door is opened or closed. A flexible protection sleeve shall be installed over the conductors.

### **11.5.4 Load end connections**

- a. The supply end connections to all equipment shall under all circumstances be at the top and the load end connections at the bottom.

### **11.5.5 Wiring to circuit-breakers**

- a. Equipment with a rating exceeding the current rating of 70 mm<sup>2</sup> conductors shall be connected by means of busbars to the main busbars.
- b. Looped connections may only be installed for a maximum of two outgoing circuits. Where there are more than two outgoing circuits, busbars shall be used and equipment connected individually to the busbars.
- c. Where miniature circuit-breakers are mounted in continuous rows and supplied by busbars connected to each moulded case circuit breaker, each busbar shall be supplied by a separate conductor. This conductor shall be connected to the busbar by means of a separate lug and not via an moulded circuit breaker terminal.

### **11.5.6 Conductor terminations**

- a. Connections to circuit-breakers, isolators, contactors, etc. shall be made by one of the following methods:
  - i. A ferrule of the correct size, shall be used as far as possible where cable conductors are connected directly to equipment with screws against the conductor strands.
  - ii. Soldering the end of the conductor, or

- iii. Winding a conductor strand tightly around the end to totally cover the end.
- iv. All conductors terminating on meters, fuse holders and other equipment with screwed terminals shall be fitted with lugs.
- v. The lugs shall be soldered or crimped to the end of the conductor.
- vi. The correct amount of isolation shall be stripped from the end to fit into the terminal.
- vii. Strands may not be cut from the end of the conductor.

#### **11.5.7 Identification**

- a. The colour of the conductors for all 220/250 V circuits shall correspond to the colour of the supply phase for that circuit. Neutral conductors shall be black.
- b. Earth conductors shall be green or green/yellow, except for cases where bare copper earth straps are used.
- c. All control conductors shall be grey.
- d. All conductors that terminate at wiring terminals and all conductors used for the internal wiring of the switchboard, shall further be identified at both ends by means of durable cable marking ferrules. PVC or other tape is not acceptable.
- e. The numbers on the markers shall be shown on the wiring diagrams.
- f. Where wiring channels are used, they shall be installed horizontally and vertically. Under no circumstances may power and control circuit wiring be installed in the same wiring channel. Channels shall not be more than 80% full.
- g. All wiring between different panels within the same switchboard shall be installed in wiring channels.
- h. Grommets shall be installed in each hole in the metalwork through which conductors pass.
- i. All wiring shall be installed away from terminals, clamps or other current carrying parts. Wiring shall also be kept away from exposed metal edges or shall be protected where they cross metal edges.
- j. Conductors may be jointed at equipment terminals or numbered terminal strips only. No other connections are allowed.
- k. Where conductors change direction, smooth bends shall be formed with a radius of at least 5 times the outside diameter of the conductor or harness.
- l. Where screened cables are specified, the screening shall be earthed in the switchboard or control board only unless clearly specified to the contrary. Screened cabled entering control boxes through pressed knock-outs, shall terminate in compression glands. Conductors shall as far as possible remain inside the screening at terminations. Where conductors have to separate from the screen, the braiding shall be separated and the conductors drawn through the braid without damaging the braiding. The conductors shall then be connected to their respective terminals and the screening smoothed and connected to the earth terminals. m. Where neutral connections are looped between the terminals of instruments, it is essential that the two conductors ends be inserted into a common lug or ferrule and are crimped or soldered together in order that the neutral connection is not broken when the conductors are removed from one of the instruments. n. Wiring should as far as possible be confined to the front portions of switchboards for ease of access.
- o. A maximum of two conductors will be allowed per equipment terminal. Where more conductors must be connected to the same equipment terminal (e.g. main circuit-breaker feeding other circuit-breakers), stud busbars shall be provided for the various conductors.



## **11.6 Alternator circuit-breaker (ACB)**

- a. The alternator shall be protected by a circuit breaker sized in accordance with the fault current decrement of the alternator. (IEEE standard 446 refers)
- b. The circuit breaker shall be positioned in the control cubicle.

### **Emergency stop-button**

- a. An emergency stop-button shall be positioned on the front panel of the control cubicle. When depressed the diesel/alternator shall immediately stop and the load shall be disconnected from the set.
- b. The stop button shall be of the self-latching, twist release type.
- c. The stop button shall be red with a minimum diameter of 25 mm.
- d. A label indicating its function shall be positioned directly above the stop button.

### **Remote stop/start control**

- a. A control circuit shall be provided to operate the engine/alternator set(s) as a station power supply by
- b. means of remote signals. The circuit shall override the incoming supply-fail timer when the start signal is received. On receiving the remote stop signal, the control circuit shall override the incoming supply-restore timer. Both signals will be generated by a remote earth signal.

## **11.7 Switchgear and mains bypass switch**

### **11.7.1 General**

- a. The switchgear, circuit breakers and contactors shall be of the M&G (or equal) and or Telemecanique manufacture and shall be selected fully in accordance with SABS IEC 947-6-1:1989 including amendment 2 September 1997. (Should the specific change over make use of any contactors, circuit breakers or any other single throw devices, they shall still comply to the same test/operational criteria.
- b. The system classification shall be class CB.
- c. The switching mechanism utilisation category shall be AC-33A (frequent operations)
- d. Three-pole switchgear shall be used for all machines.
- e. All the switchgear and circuit breakers shall be M&G (or equal). Surge protection shall be supplied with condition indication and shall be of the DEHN guard TT 4P 40kA or equivalent. (If the protection breaker exceeds 630A then 315A pre-fusing will be fitted).
- f. The surge protection alarm contacts shall be wired to the controller for extension and monitoring purposes.
- g. The change-over breakers (or motorized), mobile/ standby switch and mains bypass switch shall be provided as called for in the requirements accompanying this standard. The changeover breakers and bypass switch may be
  - i. set-mounted;
  - ii. provided in a separate floor-standing cubicle;
  - iii. provided as part of the electrical system of the building.

## **11.8 Switchgear**

- a. When provided as called for in the specification the change-over circuit breakers shall be remote activated from the set-mounted control cubicle. A 220 V ac supply is required to activate the change-over circuit breakers.
- b. The floor-standing change-over and bypass cubicle shall be designed for both top and bottom entry cable feeds.
- c. The change-over circuit breakers shall be mechanically and electrically interlocked.

## **11.9 Bypass requirements**

- a. The bypass switch shall be provided as called for in 11.10c and shall be an on-load switch.
- b. A three-position bypass switch shall be provided.
- c. The bypass switch shall provide the following functions:
  - i. Normal: The machine will start up automatically on a mains failure
  - ii. Bypassed: Incoming mains connected directly to the load with the alternator isolated
  - iii. Off: Incoming mains, alternator and load isolated

## **11.10 Miscellaneous**

### **11.10.1 dc circuits**

- a. All the dc circuits used in the control equipment shall be designed to operate from either 12 V or 24 V.

### **11.10.2 Devices**

- a. Devices shall be constructed from modular, either solid-state or dry-element components.
- b. The solid-state or dry-element components shall be mounted on open printed circuit cards.
- c. All printed-circuit cards shall be silver screened and readily accessible for maintenance purposes.

### **11.10.3 Relays**

- a. All relays within the control cubicle shall be securely mounted by using suitable spring clips.
- b. Only the following slave relays will be allowed:
  - i. Starter solenoid
  - ii. Fuel solenoid
  - iii. Mains contactor
  - iv. Alternator contactor
  - v. Dummy load when required

## **11.11 Service**

- a. The control cubicle equipment shall be suitable in all respects for continuous duty at full load at an ambient temperature of 29.4 °C and relative humidity of 50%.
- b. All contactors and relays in the apparatus shall be fitted with contacts suitable to break 1,5 times the rated current passing through them.

## **11.12 Spares**

### **11.12.1 Specific spares**

- a. The following spares shall be supplied with each control cubicle:
  - i. Fuses: 100 %
  - ii. Lamps: 200 %

## **11.13 Insulation resistance**

- a. The insulation resistance between any component and wiring forming part of a circuit and the earthed frame, between any two separate circuits shall not be less than 50 Meg Ohm when tested with 500 V dc after steady electrification for 2 min.
- b. The insulation test shall not be applied to components such as semiconductors, which may be damaged by the high test potential.
- c. Alternatively the isolation between components and wiring and the earthed frame shall withstand a test voltage of

2 kV (rms) for all mains circuits and 1 kV (rms) for all dc circuits with the exception of electronic control modules, applied for not less than 3s.

- d. The above tests shall be carried out at a relative humidity of 85 %.

#### 11.14 Protection

- a. Adequate provision shall be made to protect the control circuits against voltage transients induced by switching or lightning surges. The requirements laid down in category 1 as per SABS IEC 60664-1
- b. All metal work, including the cabinet, shall be electrically bonded to the earthing terminal. Earth continuity conductors shall not be less than half the cross section area of mains cables to the cubicle, with a minimum of 4 mm<sup>2</sup>.
- c. The neutral point of the alternator shall be connected to this bar. Suitable terminals shall be provided on the earth bar for connection of the main earth conductor.
- d. All relays or other components carrying mains voltages shall be labelled: DANGER-MAINS VOLTAGE
- e. All coils of contactors and relays used in the apparatus shall be rated at twice, or more, the operating current. All solenoids must have their switching surges suppressed by diodes or RC combinations.
- f. Mains terminals shall be separated by at least 20 mm from each other or from other terminals, and shall be protected from accidental contact. The rod test shall be applied as laid down in the NEMA Standard (National Electrical Manufacturing Association Standards)
- g. All circuits shall be protected via suitably rated din rail M&G (or equal) circuit breakers with a minimum fault level of 5 kA. For instruments suitably rated fuses must be used.

### 12 ENCLOSURE

#### 12.1 General

- a. The enclosure shall be completely vermin-proof, removable from the set and shall be constructed of 3CR12 stainless of a minimum thickness of 1,5 mm. or as specified in the companying tender document.
- b. The enclosure shall allow easy access to the engine, alternator, radiator filler cap and control cubicle for maintenance purposes.
- c. The doors shall be flush with the rest of the canopy and of the side opening type. A minimum of four doors are required i.e. two on either side.
- d. The door hinges and locking bars shall be of a heavy-duty type and be manufactured of an alloy or mild steel which is hot dip galvanised. The hinges shall be fitted with a nylon bush and grease nipple.
- e. The diesel fuel level indicator and alternator rating plate shall be clearly visible with the doors open.
- f. Unless specified the silencers shall be mounted within the enclosure.
- g. The roller bar (see Para 6.4a) shall be mounted within the enclosure with the lifting eye protruding through the roof.
- h. Perforated sheeting shall be fitted over all insulating material inside the canopy of all soundproof sets.
- i. Rubber seals on doors shall be equal to or similar to the Mc-Norten pinch weld win lace door rubbers.

#### 12.2 Design

- a. The enclosure shall be designed to be weather-proof and sound-proof. Rivets or self-tapping screws will under no circumstances be allowed for fixing the various sections of the enclosure. Only corrosion resistance coated nuts and bolts are acceptable.
- b. The starter battery in sound-proof canopy sets shall be housed in an insulated compartment with forced air flow when the engine is running. It should be provided with easy access for maintenance and removal of the battery.

#### 12.3 Roof

- a. The roof of the enclosure shall be constructed for proper drainage of water with a pitch of not less than 7 degrees.

#### 12.4 Lamp fitting

- a. A lamp fitting and its associated on/off door switch shall be provided inside the enclosure for illumination of the

- control panel and enclosure.
- b. The power for the lamp shall be obtained from the starter battery.

## **12.5 Sound-proofing**

- a. The sound-proofing is required on all units and shall have a maximum noise level generated by the set under any load condition not exceeding 65 dBA measured in any direction at a distance of 7 m from the centre of the side of the unit and 1m above ground level.

## **12.6 Cable Entries**

- a. The cable entries for all sets shall be standard and so positioned that the output cable and sensing leads are in the middle of the side of the set, unless otherwise stated.
- b. For a soundproof canopy and mobile/trailer set the terminal connections shall be brought out to a lockable terminal box mounted at the rear.
- c. A 6 ampere switch socket shall be provided in the externally mounted terminal box. The supply to be taken from the load side protected by earth leakage.

## **13. INPUT AND OUTPUT TERMINALS**

- a. The terminals shall be clearly marked as follows:
  - i. Red phase Mains
  - ii. Red phase Alternator
  - iii. Blue phase Mains
  - iv. Blue phase Alternator
  - v. Yellow phase Mains
  - vi. Yellow phase Alternator
  - vii. Neutral Mains
  - viii. Neutral Alternator
  - ix. Earth
- b. A transparent cover plate shall be provided to protect the terminals against accidental contact and to separate it from the control terminals.

## **14. SENSING TERMINALS**

- a. Two groups of terminals, mounted close to the main output terminals are required for mains sensing, change-over contactor control and for feeding the battery charger, jacket heater and diesel fuel pump mounted on the diesel alternator set.
- b. Sensing shall be done for three wire, separated neutral. (Three pole system)

## **15. AUTOMATIC CO<sub>2</sub> FIRE EXTINGUISHER SYSTEM**

The system shall consist of a 45kg CO<sub>2</sub> cylinder with CO<sub>2</sub> trigger cylinder and Dab valve, this will be triggered by fusible link in the event of fire. (See brochure enclosed)

Firetrace shall be a simple self-activating system designed specifically for installations inside enclosures.

The system shall not employ sensitive electronic detection devices or batteries that can be affected by humidity or dirt.

The red flexible firetrace tube shall be manufactured from specially produced polymer materials to achieve the determined rupture values.

**Note:** Firetrace does not rely on detecting fires at a single point, but at any place along the tube length.

The CO<sub>2</sub> discharge shall only be delayed when the genset is running. This is to allow time for the genset to shut down when a fire is detected, preventing the CO<sub>2</sub> from being vented by the radiator fan.

### **CO<sub>2</sub> System Operation**

The automatic CO<sub>2</sub> system shall consist of a 45kg CO<sub>2</sub> bottle fitted with an indirect high-pressure valve, this valve shall be held closed by 18bar control pressure captivated in the red trace line. The valve shall open and discharge the CO<sub>2</sub> once a fire ruptures the trace line. A pressure switch fitted to the end of the line shall detect the pressure drop in the line and it must give an alarm as well as a shut down command to the genset. A solenoid valve shall be fitted inline with the trace line, adjacent to the high pressure valve will automatically close when the set is running and open only when the genset is at rest, thus ensuring that the CO<sub>2</sub> is not vented by the genset air flow.

Under normal standby conditions the solenoid valve shall be open; hence any fall in trace line pressure will immediately discharge the CO<sub>2</sub> bottle and extinguish a fire.

The fire trace line shall be fitted with a pressure gauge (mounted above the control panel).

This pressure gauge, when in 'Green' zone shall indicate that the pressure in the trace line, as well as the bottle pressure, is healthy.

## **16. BUSBARS AND OUTPUT CABLES**

- a. All busbars used shall be of the electrolytic tough-pitch high conductivity copper bars only and shall comply with SABS 1195-1978 with condition of temper H2 and have a rectangular section and edges rounded off as per table 15 (of SABS 1195-1978).

## **17. FIXING OF AUXILIARY EQUIPMENT**

- a. Self-tapping screws will under no circumstances be allowed for supporting auxiliary equipment such as the battery chargers, regulators, etc.
- b. Corrosion resistant coated nuts and bolts shall be used with spring washers. The nut shall be welded to the support structure.

## **18. HANDBOOKS AND DRAWINGS**

- a. The contractor shall supply the following handbooks and drawings:

### **18.1 Engine and Alternator handbooks**

- i. Service manual
- ii. Spare parts manual
- iii. Spare part list -indicating make, rating etc.

### **18.2 Control cubicle handbooks**

- i. Description (operating) manual
- ii. Fault-finding manual
- iii. Component lists -indicating make, rating etc.

### **18.3 Drawings**

- a. Wiring and schematic drawing showing detailed circuitry of the following:
  - i. Engine
  - ii. Alternator
  - iii. AVR
  - iv. Control cubicle
  - v. Interfacing between assemblies, sub-assemblies, components, etc.
- b. Each wire, component, terminal, etc. shall be clearly annotated on the drawing for identification and maintenance purposes.
- c. No drawing shall exceed A1 size. Each drawing shall be properly numbered, e.g. AB 001 Sheet 1, AB 001 Sheet 2 etc.

### **18.4 Basis of provision**

- e. Handbooks and drawings shall be provided on the following basis:
  - i. Two copies of every handbook and of every drawing per plant (for Region use).
  - ii. One copy of every handbook and of every drawing and CD per type of plant (CSIR).
  - iii. A separate schematic drawing laminated shall be pasted inside the control cubicle.
  - iv.

Unless handbooks and drawings are available at the time of final inspection the quality certificate will not be issued.

## 19. MAKER'S TEST

- a. Every engine/alternator set and cubicle shall be tested as a unit at the maker's works. The alternator shall be loaded to its full capacity at unity power factor. The set shall be capable of carrying this load without overheating of the engine of the alternator for one hour.
- b. The factory acceptance test sheet shall be completed.
- c. The following shall be recorded every 15 minutes throughout the test:
  - i. Voltage across load
  - ii. Current through load
  - iii. Coolant temperature
  - iv. Ambient air temperature
- d. Any adjustment made to the set during the test run shall be recorded on the test sheet.
- e. The supplier shall specifically certify that every set is capable of producing its full output without overheating of the alternator or the engine when operating under the following conditions.
  - i. Altitude: 701 m
  - ii. Ambient air temperature: 29.4 °C
  - iii. Relative humidity: 50 %
- k. The above test results must be available at the time of final inspection failing which an inspection certificate will not be issued.

## 20. MARKINGS AND LABELLING

### 20.1 Markings

- a. All meters, switches, indicators, lamps, etc. on the face of the cubicle shall be clearly marked in English as to purpose or function.
- b. Each set shall be marked with a MNQUMA LOCAL MUNICIPALITY emblem.
- c. An engraved riveted plate with the following inscription in letters not less than 10 mm high, shall be mounted in a readily visible position on the front of the unit:  
**"DANGER -MAINS VOLTAGE"**
- d. The manufacturer's rating and identification plate shall be mounted on the control panel.
- e. The identification plate shall include the following in letters not less than 5 mm high:
  - i. Standard no
  - ii. MNQUMA LOCAL MUNICIPALITY order no
  - iii. Date of manufacture
  - iv. Manufacturer serial no.
  - v. Total dry mass of set
  - vi. kVA rating @ 0,8pf

### 20.2 Labelling

- a. All assemblies, sub-assemblies and components shall be clearly labelled for easy identification on the schematic circuit drawings and wiring diagrams.

## 21 DELIVERY

- a. Delivery shall take place in accordance with the stipulations in the tender documents.
- b. The supplier shall be responsible for any damage arising from inadequate or careless packing.
- c. A price for delivering the equipment to the address given in the order.
- d. The following particulars must be indicated clearly and legibly on the outside of packages/containers by the successful tenderer:
  - i. Supplier's name
  - ii. Supplier's code or maker's number
  - iii. MNQUMA LOCAL MUNICIPALITY number

- iv. Quantity in container

## **22 TECHNICAL ASSISTANCE**

- a. The supplier shall undertake to furnish such technical assistance and information as may be required by the MNQUMA LOCAL MUNICIPALITY to overcome any difficulties that may be encountered in the operation of sets.

## **23 GUARANTEE**

- a. The plant shall be guaranteed against faulty material, faulty design and poor workmanship, fair wear and tear excepted.
- b. The guarantee shall be either for a period of one year after date of installation. The guarantee shall further conform to the requirements laid down in MNQUMA LOCAL MUNICIPALITY standard commercial terms and conditions.
- c. The availability of all components shall be guaranteed for a min. period of 10 years.

## **24 OCCUPATIONAL HEALTH AND SAFETY ACT (OHSA)**

- a. The Occupational Health and Safety Act, Act No. 85 of 1993, as amended shall take precedence; no document will override the Act.
- b. The Diesel Alternating set and equipment shall be in accordance with the Occupational Health and Safety Act as amended.

## **25 ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)**

- a. The Diesel Alternating set and equipment shall be in accordance with MNQUMA LOCAL MUNICIPALITY Environmental Management System.

## **26 REFERENCES**

Change Management Process No changes shall be made to this document unless a "Change Proposal" form TFMC-FO-0017 has been raised and processes in accordance with the Procedure TFMC-PR-0004 "Change Management".

## **INSPECTIONS, TESTING, COMMISSIONING AND HANDING OVER**

### **1. FACTORY INSPECTIONS AND TESTS**

- 1.1 The Contractor shall advise the Engineer in writing of any routine, type or specific tests to be carried out on equipment during the course of manufacture in the manufacturer's factory or works or of any stage of completion in the manufacturing process which requires inspections in terms of the Contract and Specifications. Such notice shall be given at least 7 days prior to the testing or inspection being required. The Contractor will despatch equipment from the factory at his own risk if tests have not been witnessed and inspections not been carried out by the Engineer or his authorised representative and approval given by the Engineer for dispatch. The Contractor's Project Engineer shall in all instances do his own inspections and ascertain that equipment will be ready for inspection or testing before the Engineer's attendance is requested. The Engineer also reserves the right to inspect any equipment at the manufacturer's works at any stage during the manufacture. The Contractor's Project Engineer will also be required to attend all inspections and tests with the Engineer or his authorised representative.

### **2. PHYSICAL INSPECTION PROCEDURE**

On completion of the Installation or before any inspection or testing is required, the Contractor shall carry out his own inspections to ensure that the installation and equipment comply with the Specifications and the quality of workmanship and materials are to the specified standards.

The Engineer will not act as the Contractor's inspector or quality control official.

- 2.1 Once the Contractor has completed the installation, written notice shall be given to the Engineer in order that a mutually acceptable date can be arranged for a joint inspection.

- 2.2 During the course of the inspection, the representative of the Engineer will compile a list of items (if any) requiring further attention. A copy of this list will be provided to the Contractor who will have a period of 7 days in which to rectify the offending items of the installation.
- 2.3 The Contractor shall then provide written notice that he is ready for an inspection of the remedial work to the offending items.
- 2.4 This procedure will continue until the entire installation has been correctly completed in accordance with the specifications.
- 2.5 After the first inspection all time and traveling costs incurred by the Engineer for further inspections or re-inspections will be payable by the Contractor.

### **3. TESTING AND OPERATIONAL INSPECTION PROCEDURE OF INSTALLATIONS**

- 3.1 The Contractor shall have the complete installation tested and approved by the local authorities where applicable.
- 3.2 Subsequent to the above testing and approval, the Contractor shall in the presence of the Engineer test all circuits with respect to:
- Polarity
  - Phase balance
  - Insulation level
  - Earth Continuity
  - Earth leakage relay sensitivity
  - Trip testing and proving of all protection equipment
- A certified schedule of all measured values shall be submitted to the Engineer.

### **4. TYPE TESTS, TEST CERTIFICATES AND SPECIALISED TESTS**

- 4.1 The Tenderer must submit with his tender one copy of each of all the type test certificates called for in the Specifications.
- 4.2 All tests shall be carried out in accordance with the requirements of the specified and recognised standards. Where tests have not been detailed in the documents, the Contractor shall provide comprehensive documentation of the standards and procedures he intends using in testing.
- 4.3 Such additional tests in the manufacturer's works, on site or elsewhere as in the opinion of the Engineer are necessary to determine that the contract works comply with the specifications may be called for. The general principle regarding payment of such tests shall apply i.e. the tests will be paid for if they are additional to those specified, however, payment will in all cases only be made for tests with positive results. Retest will in no circumstances be paid for.
- 4.4 The Contractor will be required to submit certified copies of all type, routine and rating test certificates to the Engineer.

### **5. "AS BUILT" DRAWINGS, MAINTENANCE AND OPERATING MANUALS**

- 5.1 As each portion of the work is completed, the Contractor shall provide the Engineer with as-built drawings maintenance and operating manuals and other documents which are called for in the Standard Technical Specification, the Detail Technical Specification or any other specification or documentation forming part of this contract or as agreed upon.
- 5.2 Where as built layout drawings are required and where such electrical layouts are drawn on Architectural drawings, the Engineer will supply sepias of the Architectural drawings on request and at the current market costs to enable the Contractor to accurately detail the completed installation. The Contractor shall obtain his own "base" material and information for all workshop, design, schematic and wiring diagrams or other drawing which must be provided as built.
- 5.3 In addition a complete reticulation and schematic diagram showing all supply cables and switchboards or other equipment shall be provided behind a clean plastic cover in the substation or adjacent to the Main Switchboard if not located in a substation.
- 5.4 The Contractor shall before the works are taken over by the Employer provide three complete sets of Operating and Maintenance Manuals together with drawings and technical data sheets of the works as completed in



- 5.5 sufficient detail to enable the Employer to maintain, dismantle re-assemble and adjust all parts of the works.  
The installation will not be regarded as complete until all of the requirements of this section have been met.

## **6. COMMISSIONING**

- 6.1 The installation shall be comprehensively commissioned as individual and integrated systems as may be required by the configuration after the works are substantially complete.
- 6.2 The Contractor shall provide adequate and competent personnel for commissioning of every particular installation and for the full duration of the commissioning process.
- 6.3 The commissioning shall include interaction between other services and contractors where interdependence of installations are encountered.
- 6.4 The commissioning process shall after all testing has been completed be the final proving ground of the systems and during this procedure the installations shall be subjected to all possible inputs and actions which may be encountered under operational conditions. The Contractor shall prove the full operation, working and compliance of the installation in accordance with the specifications.
- 6.5 A programme of the planned commissioning procedures shall be submitted to the Engineer at least 7 days before commissioning commences to enable the Engineer to witness the commissioning.

## **5.28 GENERATOR OPERATION PROCEDURE**

A generator mains restoration procedure shall be provided and attached to the front of the generator control panel, behind the control panel door. The operation procedure shall be engraved on a red and white perspex label.

## **5.30 CRITICAL ALARMS**

- Alarm Pick-up Points Requirements For monitoring, the installation must comply with the following:
- a) Equipment must be supplied with normally closed potential free alarm contacts as defined by the minimum alarms document. A double contact shall be provided for monitoring.  
Additional alarms can be added depending on costs and criticality.
- b) The alarms shall be wired from the pick-up points to a termination connector (x 10) in the control panel where they must be labeled.

## **Alarms**

The following is the minimum set of alarms that shall be collected from each site.

### **Standby plant indicator**

Incoming Mains Failure  
Standby automode failure  
Fuel sender 20% (low fuel alarm)  
Standby running

## **5.31 SITE TESTS AND COMMISSIONING**

The following minimum site tests shall be carried out by the Contractor and the results presented to the Engineer:

- insulation resistance between all conductors and earth
- insulation resistance between all conductors and neutral
- insulation resistance between all 3 phase conductors
- resistance of earth paths between the main earth bar and all exposed conductive parts of the installation
- earth loop impedance test upstream of each of the distribution boards to test the resistance value of the earth continuity conductor under live conditions
- polarity of light switches and socket outlets earth leakage protection
- operation of intruder alarm and fire detection devices operation of all protection devices and systems
- measurement of all full load currents
- test integrity of the lightning protection system
- interfaces between aircon, intruder and electrical systems

After submission of the test results, the Electrical Contractor shall notify the Engineer that the installation is complete, tested and in working order. The Engineer will witness the re-testing of the installation. Should any of the tests fail during this witness test, an amount of R500.00 shall be deducted from the final account for each area, which has failed this, and also each subsequent test. Last minute repairs during testing

procedures will not be accepted.

The Electrical Contractor shall be responsible to supply all the tools, materials, labour and equipment for the testing, including a portable power generator and adequate fuel should an electrical power connection not be available on that day.

The Electrical Contractor shall prepare and complete a Certificate of Compliance for all works executed under this contract, as required by the Occupational Health and Safety Act.

#### 5.37.5 Fault finding procedures

Detailed fault finding procedures to be followed by maintenance personnel shall be listed. The procedures shall be clear, unambiguous and shall be so written to cover all eventualities in the event of failure or malfunction of any part of the system. The procedures shall also be so written, to enable maintenance personnel to perform fault finding to card level, using a standard digital multimeter. The procedures shall list all readings which can be expected from a healthy or a faulty system.

Test positions shall refer back to wire or terminal numbers as they appear on the wiring diagrams.

The fault finding procedures shall be written to enable

maintenance personnel, with the aid of a standard multimeter, to do fault finding to relay and card level.

#### 5.38 DANGER SIGNS AND NOTICES

Notices as stipulated in the latest amendment of the Occupational Health and Safety Act 85/1993 shall be installed in the substation. The notices shall be in English.

Notices shall be in accordance with SABS 872-1967 Industrial Safety Signs.

All notices shall be of the metal engraved type with a minimum metal thickness of 1 mm. The words shall be in red lettering on a white background.

The lettering shall be embossed and the colouring shall not fade in sunlight.

The following notices shall be exhibited at all designated entrances to the substation (3 rooms):

- (a) A notice prohibiting unauthorised persons from entering the premises;
- (b) A notice prohibiting any unauthorised persons from handling or interfering with electrical apparatus;
- (c) A notice containing directions as to procedure in case of fire;
- (d) A notice containing directions as to restoration of persons suffering from the effects of electric shock.
- (e) A Skull and Crossed Bones danger notice shall be installed on each substation door. One nameplate shall also be provided and mounted on each substation door: (Lettering at least 100 mm in height) (i.e. HV Room, LV Room, Rotary UPS).

#### 5.39 REPAIRS DURING THE 12 MONTH DEFECTS LIABILITY PERIOD

The equipment and installation supplied under this contract shall be guaranteed for a period of twelve months from date of acceptance by in all respects and commissioned for continuous service. The tender price shall include for the above.

##### 5.39.1 Repair during 12 months defects liability period

The defects liability will be for a period of twelve months, calculated from the date of issue of the Certificate of completion (first handover) by the Engineer. Retention funds will be reduced to 5% upon the commencement of the defects liability period. The balance of the retention money will be paid out after the lapse of the defects liability, provided the installation has in the opinion of the Engineer, been in satisfactory working order during this period.

The Electrical Contractor shall be responsible for the replacement of all faulty electrical equipment during the defects liability period.

Faulty electrical equipment, shall be attended to immediately, irrespective of the scheduled date of the next visit, and shall be replaced or repaired within 3 days of being instructed by the Engineer.

All repairs shall commence within 24 hours of written or verbal advice by the Engineer. Advice by facsimile shall be considered to be in writing. Should the Electrical Contractor fail to commence repairs to the faulty installation within 24 hours from the time of notification, the repair work shall be carried out by others and the costs thereof, shall be deducted from funds held in retention.

All repairs shall be carried out to the satisfaction of the Engineer. All labour, material and infrastructure costs incurred for the repair or replacement of faulty equipment shall be borne by the Electrical Contractor. No claims for payment in this regard will be considered.

All labour, material, transport and infrastructure costs incurred for repairs during the defects liability period shall be borne by the contractor

## **SECTION 3 – TECHNICAL SPECIFICATION**

### **1.0 GENERAL**

#### **A. Generator**

- a) This tender is for the supply, deliver, install, commission, test and maintain outdoor emergency generating sets at Mnquma Local Municipality for Mnquma Main Building,
- b) This installation must comply fully with all the sections of this document. This technical specification is supplementary to the Equipment Requirements, Section 2, and must be read together where they are at variance the Technical Specification shall apply.
- c) The generator sets must be housed in corrosion resistant and sound attenuated enclosures.
- d) The removal and transport the old generator from Mnquma main building to the executive building.
- e) The Contractor shall provide the training to the municipal staff for the operation and maintenance of the Generator.

#### **B Distribution Board**

- a) Refurbishment of the distribution board and convert to be the semi flushed distribution board.
- b) The supply and installation of cables from the Eskom Supply Point to the Main distribution board.
- c) The supply and installation of new distribution board.
- d) Provision of Certificates of Compliance for the complete installation included in this specification.
- e) All other materials, equipment, labour and services necessary for the complete, safe and efficient operation of the Works in full accordance with the specifications as laid down in this document.
- f) Diagnose and trace the loads for the new distribution board.
- g)

#### **C. Uninterrupted Power Supply (UPS)**

- a) Supply and install UPS system with a minimum of 4 (four) hours runtime.
- b) A maintenance plan to service the machine quarterly
- c) The installation must guarantee continuous supply whenever power fails.
- d) The UPS must allow increasing the back-up time in future, simply adding battery drawers. Future upgrades must not require factory modifications and dedicated special tools for installation.
- e) Draft a maintenance plan and attach as part of the proposal.
- f) The UPS must be located at the server room, supplying both buildings at Main Site plus the nearby robots (King and Mthatha Street)

- g) Provide onsite and remote support from a qualified technician and detail support availability.
- h) Provide monitoring software and fully train municipal technician on using the application, and other necessary procedures.
- i) The appointed service provider will be required to attend monthly (and on request) SLA meetings as part of performance monitoring.
- j) On the proposal, bidders must detail how support and maintenance for a period of 36 months will be carried out, detail call out costs per hour and rates per km to travel for onsite support.
- k) Develop detailed proposed Service Level Agreement to be attached to the solution proposal.

**ANNEXURE B  
PAST EXPERIENCE**

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

EMPLOYER /INSTITUTION NAME	NATURE OF WORK/ PROJECT NAME	AWARDED AMOUNT	ANTICIPATE D / ACTUAL COMPLETIO N DATE	EMPLOYER CONTACT NO.

.....  
**DATE**

.....  
**SIGNATURE OF BIDDER**

**ANNEXURE C**  
**JOINT VENTURE DISCLOSURE FORM**

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**1A     JOINT VENTURE REQUIREMENTS**

**DEFINITION:- “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.

Should a group of companies/firms and/or interested parties wish to enter into a joint venture/consortium agreement the following minimum requirements must be met:-

1. A copy of the joint venture/consortium agreement must be attached.
2. Each member of the joint venture/consortium must provide a Tax Clearance Certificate
3. After award of a contract to a joint venture, the successful joint venture partners must provide a joint venture Tax Clearance Certificate and the joint venture banking details.
4. A trust, consortium or joint venture will qualify for points of their B-BBEE status level as a legal entity, provided that the entity submits their B-BBEE status level certificate.
5. A trust, consortium or joint venture will qualify for points for their B-BBEE status level as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate tender.

The joint venture/consortium agreement must contain the following:-

- a. Who the managing member will be.
- b. Who the signatory of authority will be.
- c. How the joint venture/consortium share of profit will be split.
- d. The bank account details where payments will be deposited into.
- e. The agreement must be signed by all parties.
- f. The agreement must be certified by a Commissioner of Oaths.
- g. The postal and physical address where all correspondence will be sent to.

**ANNEXURE D  
COMPANY COMPOSITION**

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**GENERAL**

All information must be filled in spaces provided. If additional space is required, additional sheets may be attached. The onus is on the bidder to fill in all the information. The ownership must accumulate to 100%.

NAME	IDENTITY NUMBER	DATE OF OWNERSHIP	% OWNED	HDI OWNERSHIP	% FEMALE OWNERS

**ANNEXURE E  
BID CHECK LIST**

All MLM individual bid documents will have the typical bid check list as an attachment. This list is to assist all bidders to submit complete bids. Bidders are to check the following points before the submission of their bid:

<b>No.</b>	<b>Description</b>	<b>✓ OR N/A</b>
1.	All pages of the bid document have been read by the bidder.	
2.	Completed the bid document in BLACK ink.	
3.	Totals from the specification / costing annexure have been carried forward to the Bid Form (MDB 1).	
4.	Totals from the specification / costing annexure must also be carried forward to the summary page in section 3.2 of the tender document.	
5.	Surety details have been included in the bid.	
6.	Completed and signed the Invitation to Bid (MBD 1)	
7.	Has not used correctional fluid (tippex) on the Pricing Schedule, Invitation to Bid (MBD 1) and any of the declaration forms.	
8.	Has attended the compulsory briefing session and has signed the attendance register.	
9.	Has fulfilled or offered equal or more than the exact specifications as listed in the schedule or terms of reference.	
10.	Has fulfilled any other special conditions included in the bid document.	
11.	Has completed the: - Pricing Schedule - Firm Prices (MBD 3.1)	
12.	Has completed and signed the Declaration of Interest (in the service of the State) (MBD 4)	
13.	Has completed and signed the Declaration of Validity of Information	
15.	Has claimed the respective preference points in terms of the Preferential Procurement Regulations 2011 by completing the Preference Points Claim Form (MBD 6.1)	
16.	Has completed and signed the Declaration Certificate for Local Production and Content (MBD 6.2)	
17.	Has provided proof of SARB exchange rate for the Local Production and Content Requirement (if applicable).	
18.	Has completed and signed the contract form for purchase of goods/works form MBD 7.1 (part 1 and part 2) and / or contract form for of services MBD 7.2	
19.	as completed and signed the Declaration of Bidder's Past SCM Practices (MBD 8)	
20.	Has completed and signed the Certificate of Independent Bid Determination (MBD 9)	
21.	Has the Joint Venture Agreement been signed and attached to the bid document (in respect of bids where a joint venture has been entered into).	
22.	Has the audited Annual Financial Statements for the past three (3) years been attached to the bid document (in respect of bids exceeding R10m).	
23.	Has the particulars of any contracts awarded to the bidder by an organ of state in the past five (5) years been attached to the bid document for bids exceeding R10m.	
24.	Has provided an original and current Tax Clearance Certificate.	
25.	Has provided an original or certified copy of the B-BBEE Status Level of Contribution Certificate.	
26.	If Sub-Contracting a portion of the works, has the service provider submitted details of the sub-contract together with the names of the sub-contractor to MLM.	
27.	If construction project (CIDB), has completed and signed the Compulsory Enterprise Questionnaire.	
28.	If construction project (CIDB), and in the case of a JV, has each partner of the JV completed a separate Compulsory Enterprise Questionnaire.	
29.	If construction project (CIDB), is registered with the Construction Industry Development Board (CIDB) and has at least the required grade and in the required class of works.	
	If construction project (CIDB), has completed the Form of Offer in words.	