

STANDARD BIDDING DOCUMENTS



GUYANA POWER AND LIGHT INC

Procurement of Goods

IFB # GPL- PD - 028- 2022

Supply of:
2 – 1 MVA, Transformers

June 2022

Closing Date: July 21, 2022 @ 14:00 hrs or 2:00pm
Bid Opening: July 21, 2022 @ 14:30 hrs or 2:30pm

Invitation for Bids (IFB)

Cooperative Republic of Guyana

IFB# GPL - PD – 028 - 2022

- 1.** The Guyana Power and Light Incorporated (GPL) invite sealed bids from eligible bidders for the supply of **2 – 1 MVA Transformers**

A bid Security of 2 % of the tendered sum *must* be submitted along with the bid.

Bids shall be valid for 90 days after the date of bid opening.

Bids must be submitted via email to our electronic tender box: gpltenderbox@gplinc.com

- Bids must be submitted with a valid **National Insurance (NIS) & Guyana Revenue Authority Compliance Certificate - (Only Applicable to Local Suppliers)**

Deadline for submission of bids is 14:00 hrs. (2:00 p.m.) on, **July 21, 2022.**

Bid opening is scheduled for 14:30 hrs (2:30 pm) on, **July 21, 2022** at GPL's Board Room 91 Duke Street, Kingston, Georgetown, Guyana via Zoom Call in the presence of Bidders/ Representatives who may choose to participate.

IMPORTANT: Bidders downloading the bid document must forward a registration E-mail to kgeorge@gplinc.com and proc_mng_sect@gplinc.com stating the following: Name of Bidder, Address, Contact No. and Email address.

All queries must be submitted only to tenderqueries@gplinc.com referencing name and bid document number.

The above information will be used to inform bidders of any amendments to the bidding document and also to forward all responses to queries.

GPL reserves the right to reject any or all bids.

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INSTRUCTIONS TO BIDDERS

A. Introduction

1. Description of the Procurement

The Procuring Entity is Guyana Power and Light Inc. that intends to procure the goods identified in the *Bid Data Sheet* and in the Schedule of Requirements.

2. Eligibility and qualifications of Bidders

- 2.1 In order to be awarded a procurement contract, Bidders should possess the technical and financial capacity needed to perform the contract. They should fulfill their tax and national insurance fund liabilities in Guyana and should not currently be subjected to a debarment penalty and must comply with the specific eligibility and qualification requirements referred to in the *Bid Data Sheet*. Bidders shall provide the information and any supporting documentation required by the Qualification Information Form.
- 2.2 The bidders should not have conflict of interests, including involvement in more than one bid in this proceeding, should not be associated nor have been associated in the past, directly or indirectly, with any agency or any of its representatives or affiliates, that have been engaged by the Procuring Entity to provide consulting services at the preparation stage of the bidding documents, technical specifications and other documentation that are subject to be used in the procurement of goods, which must be purchased in accordance with the Invitation for Bids. In cases where the indicated facts are discovered, the Bidder's bid shall be rejected.

B. Bidding Documents

3. Clarification and amendment of bidding Documents

- 3.1 The Procuring Entity in not more than three (3) calendar days, will respond in writing (including by fax or electronic mail) to any request for clarification of the bidding documents to be received (in writing, including by fax or electronic mail) not later than 5 calendar days before the expiry of a deadline for submission of bids. At the same time, the Procuring Entity's response shall without identifying its source of the request, be distributed to all bidders who have received the bidding documents from the Procuring Entity.
- 3.2 At any time before the deadline for submission of bids, the Procuring Entity may amend the bidding documents by issuing an Addendum and notifying it to the prospective bidders.

C. Preparation of Bid

4. Language of Bid

- 4.1 The bid prepared by the Bidder, as well as all correspondence and documents related to that bid and exchanged by the Bidder and the Procuring Entity shall be written in the language *specified in the Bid Data Sheet*.

5. Documents Included in Bid

- 5.1 The bid prepared by the Bidder should contain the Form of Bid, the Price Schedules and the other documents to be submitted in accordance with these Instructions to Bidders.

6. Bid Price

- 6.1. Subject to the choice of INCOTERMS as indicated in the Bid Data Sheet, the prices given in the Price Schedule shall include all transportation costs to the destination point indicated in the Contract, all taxes, duties, payments collected, in accordance with the laws of Guyana and delivery related and other costs on performing of contractual obligations.
- 6.2. The prices offered by the Bidders shall remain fixed during the whole period of Contract performance and shall not be modified in any circumstance.

7. Bid and Payment Currency

- 7.1 The prices shall be indicated in UK Pounds, US Dollars or Euros for Foreign Suppliers and Guyana Dollars for Domestic Suppliers, unless otherwise specified in the *Bid Data*

Sheet.

8. Bid Security / Bid Securing Declaration

- 8.1 Unless otherwise provided in the *Bid Data Sheet*, the Bidder shall furnish, as part of his bid, a Bid Security, in the form, currency and amount specified in the *Bid Data Sheet* with a validity period for not less than 2 weeks upon the expiry of the bid validity period and in line with the form provided, or, if so indicated in the BDS, a Bid Securing Declaration in accordance with the form provided. **A Bid Securing Declaration is not required.**
- 8.2 The bid security may be forfeited, or the Bid Securing Declaration executed, if the Bidder:
- (a) withdraws his/her bid after it is opened during the period of validity specified in the bid; or,
 - (b) Having been awarded the contract fails:
 - (1) To sign the contract on the terms and conditions provided in his bid; or
 - (2) To furnish the Performance Security, if required to do so.

9. Period of Validity of Bid

- 9.1 Bids shall remain in force during the period specified in *the Bid Data Sheet* after the date of bid opening.

10. Deadline for Submission of Bids

- 10.1 Bids must be received by the Procuring Entity at the address and within the periods specified in *the Bid Data Sheet*. All bids received by the Procuring Entity upon the expiry of a period established for submission of bids as indicated by the Procuring Entity shall be rejected and returned to the Bidder unopened.

11. Modification and Withdrawal of Bids

- 11.1 The Bidder may modify or withdraw his bid after the bid's submission, provided that the Procuring Entity will receive a written notice of modification, including substitution or withdrawal of bid until the expiry of established period for submission of bids.

D. Opening and Evaluation of Bids

12. Opening of Bids

- 12.1 Reserved
- 12.2 The bidders' names, bid prices, including alternatives (if alternatives permitted), information on the presence or absence of required bid security, or bid securing declaration, information on the presence (absence) of tax debts and debts of social insurance payments will be announced at the opening. No bid may be rejected at the opening, exclusive of late bids to be returned to the Bidder unopened.
- 12.3 Bids (and modifications sent pursuant to ITB Clause 12.2) that are not opened and read out during the bid opening shall not be accepted for further evaluation, regardless of circumstances.

13. Evaluation of Bids

- 13.1 During the evaluation of bids, the Procuring Entity may, at his discretion, request the Bidder to provide clarification of his bid. The request for clarification and the response thereto shall be made in writing, and in that case no change in price or substance of the bid shall be sought, offered, or permitted.
- 13.2 The Procuring Entity shall determine the responsiveness of each bid to requirements of the bidding documents. For the purposes of this Clause a substantially responsive bid is one which satisfies all the indicated provisions without a material deviation or reservation.
- 13.3 The Procuring Entity may waive any minor nonconformity or small mistake or inaccuracy in the bid, which is not a material deviation from the requirements of the bidding documents, and such non-conformity or inaccuracy will not affect the bid evaluation. To the extent feasible and appropriate, for the purposes of comparing bids, acceptable deviations shall be quantified in monetary terms and reflected in adjustments to the bid price (for the purposes only of comparison of bids).

13.4 Arithmetical errors shall be rectified in the following manner: if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected. If there is a discrepancy between words and figures, the sum in words shall be preferable. If the Bidder disagrees with such correction of errors, his/her bid shall be rejected.

13.5 The Procuring Entity shall evaluate and compare only the bids that are determined to be responsive to the bidding documents.

13.6 The methodology to adjust the price to reflect the price of the missing or non-conforming item or component is the average price of the item of all responsive bids.

14. Confidentiality and Contacting the Procuring Entity

14.1 No Bidder shall contact the Procuring Entity on any matter related to his/her bid from the date of bid opening until the date of contract award, except for requests related to clarification of the bid. Information concerning the evaluation of bids is confidential.

14.2 Any effort by the Bidder to influence the Procuring Entity's decision on bid evaluation and comparison, or contract award may result in the rejection of that Bidder's bid.

E. Award of Contract

15. Award Criteria

15.1 Subject to ITB Clause 18, the Procuring Entity will award the Contract to the Bidder whose bid is determined to be substantially responsive to the requirements of the bidding documents, and who offered **the Lowest Evaluated Bid** (the bidder awarded the highest points), provided that the Bidder has been determined:

(a) to be eligible pursuant to Clause 2;

(b) to comply with qualification requirements, in accordance with Clause 2, and any technical requirements and technical evaluation criteria disclosed in the bidding documents.

16. Procuring Entity's Right to Vary Quantities at Time of Entering into a Contract

16.1 The Procuring Entity reserves the right, when entering into a contract, to increase or decrease the quantity of goods and related services specified in the Schedule of Requirements, by the percentage indicated in the *Bid Data Sheet*, no change in the unit price or other conditions shall be made.

17. Procuring Entity's Right to Accept Any Bid and to reject All Bids

17.1 The Procuring Entity reserves the right to accept or reject any bid or all bids, and to cancel the bidding process at any time prior to award of contract, without thereby incurring any liability to Bidders and without being required to inform the Bidder or Bidders of reasons of such actions.

18. Notification of Award

18.1. The bidder whose bid is accepted will be notified of the award of contract by the Procuring Entity prior to expiration of the quotation validity period.

18.2. The notice of acceptance shall be equal to entering into a Contract, provided that the Bidder furnishes the performance security and the signed Contract.

18.3. At the same time that the Procuring Entity notifies the successful Bidder in accordance with sub-clause 18.1, the Procuring Entity will notify all other Bidders of the name of successful Bidder, and his bid price.

18.4 The evaluation report and comparison of bids will not be sent to bidders.

19. Signing of Contract and performance security

19.1 At the same time with notification of award, the Procuring Entity will send the successful Bidder the Form of Contract contained in the bidding documents. The successful Bidder shall sign and date the Contract, and return it to the Procuring Entity during seven (7) days of receipt of notice of award.

19.2 Together with the signed Contract, the Bidder shall, if required to do so by the *Bid Data Sheet*, furnish the Procuring Entity with a Performance Security in the amount and form specified in the *Bid Data Sheet*.

19.3 If the successful Bidder fails to furnish the performance security, if required to do so, or within seven (7) days fails to return the Contract signed by him, then it shall be a sufficient ground to refuse the award of Contract, and to forfeit the bid security, or execute the bid-securing declaration. In that case, the Procuring Entity shall award the Contract to the next lowest evaluated Bidder, subject to the right of the Procuring Entity to reject all bids.

20. Settlement of disputes

20.1 To settle the disputes, which may arise during the execution of the Contract, the parties shall follow the procedure referred to in the *Bid Data Sheet*.

21. Corrupt and Fraudulent Practices

21.1 The Procuring Entity requires that Bidders observe the highest standards of ethics during the procurement and execution of such contracts. In pursuance of this policy, the Procuring Entity:

(a) will reject the bid if it establishes that the Bidder recommended for award has engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract in question;

(b) will declare the Supplier, for indefinite or specified period of time, to be ineligible to participate in state-financed biddings, in accordance with applicable debarment procedures.

1. Compliances

22.1 Bidder registered in Guyana must submit valid certificates of compliances from Guyana Revenue Authority (GRA), National Insurance Scheme (NIS), and (VAT registration is required only if item being supplied is Vatable).

23. Defects Liability:

23.1 The “Defects Liability Period” for the goods and related services is twelve (12) months from the date of taking over possession or such other period as may be specified in the Bid Data Sheet. During this period, the supplier will be responsible for replacing any defective item free of cost to the Procuring Entity.

24. Inspection and Testing

24.1 The Bidder shall at its own expense and at no cost to the Procuring Entity carry out all testing and/or inspections of the Goods and Related Services as are specified in the Technical Specification. Whenever the Bidder is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Procuring Entity.

The Bidder shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Procuring Entity or its designated representative to attend the test and/or inspection.

24.2 The Procuring Entity may require the Bidder to carry out any test and/or inspection not required by the Contract but deemed necessary to verify that the characteristics and performance of the Goods comply with the technical specifications codes and standards under the Contract.

24.3 The Bidder shall provide the Procuring Entity with a report of the results of any such test and/or inspection.

24.4 The Procuring Entity may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Bidder shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Procuring Entity, and shall repeat the test and/or inspection, at no cost to the Procuring Entity, upon giving a notice.

24.5 The Bidder agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Procuring Entity or its representative, nor the issue of any report, shall release the Bidder from any warranties or other obligations under the Contract.

Bid Data Sheet (BDS)

The following specific data to clauses of the provisions of Instructions to Bidders which supplement, or amend the provisions of the Instructions to Bidders (ITB) whenever there is a conflict, the provisions herein shall prevail over those in ITB

Item No.	
ITB 1.1	Guyana Power and Light Inc. of 40 Main Street Georgetown Guyana Telephone #592-226-9598 Email: gpersaud@gplinc.com The subject of the procurement is: The Supply of 2 – 1 MVA Transformers
ITB 2.1	<p>To qualify for award of the Contract, the bidders shall provide satisfactory evidence to the Procuring Entity of their capability and adequacy of resources to carry out the Contract effectively:</p> <ul style="list-style-type: none"> (a) Copies of original documents defining the constitution or legal status, place of registration and principal place of business. (b) Experience as a supplier in carrying out of two (2) or more supplies of a similar items within the last three (3) years. (c) Average Turnover for the last three years should be at least USD \$400,000. (d) Evidence of access to lines of credit and availability of other financial resources. (e) Evidence of compliance with NIS, GRA, Vat registration if applicable (Only applies to local Supplier). (f) To be covered by an express warranty period of no less than twelve (12) months. (g) Submission of Technical Specification. (h) Letter of Authorization from Manufacturer. (i) Manufacturers authorization form. (j) Resubmission of GPL’s Specification do not qualify. (k) Wherever practicable sample(s) may accompany a bid. The Procuring Entity reserves the right to request sample(s) before the awarding of a tender.
ITB 3.1	Language of Bid shall be English
ITB 4.1	Other documents to be submitted includes; GRA and NIS Compliances, (TIN Certificate and VAT Registration if the item/s being procured attract VAT). Only applies to Bidders whose registered office is within Guyana.
ITB 5.1	The price quoted by Bidders shall be on the basis of CIF for goods delivered from abroad and for goods delivered from within Guyana. Incoterms 2010 shall apply.
ITB 6.1(a)	<p>For Goods and Related Services with origin in the Procuring Entity’s country, the currency of the bid shall be Guyana Dollars (GY\$) (Bidders with registered business in Guyana must submit their bid in Guyana Dollars (GY\$).</p> <p>ITB 6.1(b) The prices shall be indicated in UK Pounds, US Dollars or Euros for Foreign Supplier and Guyana Dollars for Domestic Suppliers.</p> <p>ITB 6.1(c) The currency that will be used for bid evaluation and comparison purposes to convert all bid prices expressed in various currencies into a single currency is the Guyana Dollars .</p> <p>The source of exchange rate shall be the Bank of Guyana, and the selling rate shall be used.</p>

	The date for exchange rate shall be ten days before the opening of tenders.
ITB 7.1	A bid security of 2% of the tendered sum is required. A signed Bid Securing Declaration is not required.
ITB 8.1	The period of validity of bid is 90 Days.
ITB 9.1	Deadline for submission of bids: 14:00 hours on <u>July 21, 2022.</u> Attention: Secretary to the Tender Board, Guyana Power and Light, Inc. 91 Duke Street, Kingston Georgetown Guyana South America.
ITB 10.1	Time and place for opening of bid: The Board Room, Guyana Power and Light, Inc., 91 Duke Street, Kingston, Georgetown, Guyana, South America.
ITB 11.1	When entering into a contract, the Procuring Entity reserves the right to Increase or decrease quantities of goods by 10%.
ITB 12.1	The performance security shall be ten (10%) of the Contract Price and in the form of a Bank Guarantee or Manager's Cheque drawn on a bank registered and operating in Guyana.
ITB 13.1	Disputes that may arise in the performance of the contract shall be settled in accordance with the Procurement Act 2003.
ITB 14.1	The duration of the defects liability period is to be stated by the Bidder.

General Conditions of Contract (GCC)

The General Conditions are the Standard General Conditions of Contract. No alteration shall be made on the pages of these Conditions. The Procuring Entity, when amending or supplementing the General Conditions of Contract should do so only in the Special Conditions of Contract. Any amendment or addenda of the General Conditions of Contract shall conform to the legislation of Guyana.

1. Definitions and application

1.1 This Contract lists below the terms that have the following interpretation:

- (a) **“Contract”** means the agreement entered into between the Procuring Entity and the Supplier, as recorded in the Form of Contract signed by the parties, including all attachments and appendices thereto and all the documents referenced therein;
- (b) **“Contract Price”** means the price payable to the Supplier under the Contract for complete and proper performance of his contractual obligations;
- (c) **"Goods"** means the item(s) referred to in the SCC;
- (d) **“GCC”** - means the General Conditions of Contract contained in this Section;
- (e) **"SCC"** - means the Special Conditions of Contract;
- (f) **"Procuring Entity"** – means the Procuring entity carrying out the procurement of Goods, specified in the SCC;
- (g) **"Supplier"** – means an individual or legal entity, or a combination of any above mentioned forms which operate under the existing agreement as a joint venture and supply the Goods and Services under the Contract;
- (h) **"Day"** – means calendar day.

1.2 The General Conditions of Contract shall apply in the procurement of goods; the specific amendment, addition and alteration shall be indicated in the Special Conditions of Contract.

1.3 Warrant requirements are as may be specified in the special conditions of contract.

2. Contract Documents

2.1 Subject to the order of precedence set forth in the Contract Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The contract shall be read as a whole.

3. Performance Security

3.1 If required by the SCC, during fourteen (14) days of receipt of notification of award, the successful Bidder shall furnish the Procuring Entity with the performance security the amount and form of which are indicated in the SCC.

4. Packing

4.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to final destination specified in the Contract, and as may be required by the Special Conditions of Contract.

5. Delivery, Transportation, Mobilization Advance

5.1 The Supplier must deliver the Goods within the periods and to the Destination point indicated in the Schedule of Requirements and shall provide the documentation indicated in the SCC. Subject to the SCC, transportation of the Goods to the place specified by the Procuring Entity shall be carried out and paid by the Supplier, and related costs shall be included in the Contract Price.

6. Payment

6.1 The payment to the Supplier for the Goods delivered shall be made in accordance with the Contract in the form and within the periods specified in the SCC.

6.2 The supplier shall furnish the procuring entity with the Advance Payment Guarantee in the amount and form indicated in the SCC.

7. Prices

7.1 Prices established by the Supplier in the Contract for goods delivered shall not vary from the prices quoted by the Supplier in his bid.

8. Assignment

8.1 The Supplier shall not assign, in whole or in part, his obligations under the Contract to the third party for the execution without the Procuring Entity's prior written consent.

9. Delays in the Supplier's Performance and liquidated damages

9.1 Delivery of the Goods shall be carried out by the Supplier, in accordance with the schedule indicated by the Procuring Entity in the *Delivery Schedule*.

9.2 Except for provided under GCC Clause 13, the delay in the Supplier's performance of his delivery obligations shall render the Supplier liable for payment of liquidated damages in the amount specified in the SCC, unless an extension of time is agreed upon by the parties without application of liquidated damages. Once the maximum deduction specified in the SCC is reached, the Procuring Entity may consider termination of the Contract, in accordance with Clause 10 of the General Conditions of Contract.

10. Force Majeure

10.1 The Supplier shall not forfeit their performance security and shall not be liable for the payment of liquidated damages, or termination of Contract for failure to perform any obligation under the contract, if the failure to perform or default is the result of an event of force majeure.

10.2 "Force majeure" means an event beyond the control of the Supplier, not connected with error or negligence of the Supplier and not foreseeable.

10.3 When an event of force majeure arises, the Supplier shall promptly notify the Procuring Entity in writing of such event and its causes and to the extent possible, the expected duration of the event of force majeure and the quantity of Goods to be affected. The Supplier shall diligently search for alternative ways of execution of the Contract, irrespective of force majeure.

10.4 The Parties may agree on an extension of time for the delivery of the Goods where this is practical under the circumstances. If Force Majeure prevents the Supplier from performing its obligations in whole or material part for a continuous period of more than thirty (30) days from the date of the notice, the Procuring Entity may terminate the Contract by giving notice to the Supplier.

10.5 Provide always that the Parties acknowledge that this Contract is being entered into during the Covid-19 pandemic which has resulted in worldwide supply chain disruptions. The Supplier shall use its diligent efforts, as far as practicable, to ensure accuracy in its bid submissions relative to the period for delivery and price of the Goods, considering the existing circumstances. The Supplier shall not rely on the Covid-19 pandemic as an event of force majeure to delay performance of the Contract, except where performance becomes impossible as a result of measures or circumstances arising after entering into the Contract. The Supplier shall first discuss with the Procuring Entity the effect of those measures or circumstances preventing performance and whether any action may be taken to mitigate its effect. The Procuring Entity reserves the right to terminate the Contract in accordance with 10.4 above.

10.6 The procuring entity shall be entitled to make a claim on the advance payment guarantee irrespective of an event of force majeure

11. Termination

- 11.1 The Procuring Entity, without detriment to any other sanctions of infringement of the provisions 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 the portion or all of the Goods within the periods provided for in the Contract, or within an extension period of that Contract, or to perform any of his obligations under the Contract;
 - (b) if bankruptcy procedures are applied to the Supplier, or it is declared insolvent.
 - (c) if the Supplier, in the Procuring Entity's opinion, has engaged in corrupt, fraudulent, collusive or coercive practices when entering into or executing the Contract;
 - (d) if the Procuring Entity deems that continued implementation of the contract would no longer be expedient from the standpoint of the public interest;
 - (e) if there is prolonged force majeure as provided for in 10.4.
- 11.2 The notice of termination shall specify the reason of termination, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.
- 11.3 When the Contract is terminated in accordance with clause 10.1(d), the Goods that are complete and ready for shipment within twenty-eight (28) days after the Supplier's receipt of notice of termination shall be accepted by the Procuring Entity at the Contract terms and prices. For the remaining Goods, the Procuring Entity may elect:
- (a) to have any portion completed and delivered at the Contract terms and prices; and/or
 - (b) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Related Services and for materials and parts previously procured by the Supplier.

12. Settlement of Disputes

- 12.1 If any dispute or disagreement arises between the Procuring Entity and the Supplier for the Contract or in connection with it, the parties shall make every effort to resolve the dispute or disagreement amicably by mutual consultation.
- 12.2 If during twenty one (21) days, the parties failed to resolve their dispute or disagreement by mutual consultation; either the Procuring Entity or the Supplier may send the other party the notice of intent to commence arbitration, if an arbitration is incorporated in the Contract in the Special Conditions of Contract or otherwise agreed by the parties, or in the
- Court of General Jurisdiction if no arbitration is envisaged, and no arbitration or litigation in respect of that matter may be commenced unless such notice is given.
- Any dispute or disagreement in respect of which the notice of intent is sent to commence trial shall be heard by the Court of General Jurisdiction.
- 12.3 Notwithstanding any reference to dispute settlement herein, the parties shall continue to perform their obligations under the Contract, unless they agree otherwise.

13. Applicable Law

- 13.1 The Contract shall be interpreted in accordance with the laws of Guyana.

14. Formal Communication between the Procuring Entity and the Supplier

- 14.1 Any notice given by one party to the other pursuant to the Contract shall be in force if it is done in writing and sent at the address of other party in the SCC.
- 14.2 A notice shall be effective when delivered or on the specified date, whichever is later.

15. Taxes and Duties

15.1 The Supplier shall be fully responsible for all taxes, duties, license taxes, etc., levied in accordance with the legislation of Guyana, and subject to the application of INCOTERMS in accordance with the SCC.

16. Retention

16.1 No retention shall be applied on consumables, but warranties, guarantees and expiry dates to apply.

Special Conditions of Contract (SCC)

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract.

GCC Clause No.	Special Conditions of Contract
<p>1 1.1 (f)</p> <p>1.1 (g)</p> <p>1.1(c)</p>	<p>Definitions</p> <p>The Procuring Entity is Guyana Power and Light of 40 Main Street Georgetown Guyana South America, Tele #592-226-9598, <i>Fa x# 592 227-2180 Email: gpersaud@gplinc.com</i></p> <p>The Supplier is Not Applicable <i>(indicate full name, legal address, phone, fax and e-mail of Supplier)</i></p> <p>The Subject of procurement is <u>The Supply of 2 – 1 MVA Transformers</u></p>
<p>3.1</p>	<p>A Performance Security will be required Fourteen (14) days after receipt of notification award in the amount and form of a Bank Guarantee or Manager’s Cheque not exceeding ten (10) percent of the Contract price from a bank registered and operating in Guyana.</p>
<p>4.1</p>	<p>Packing The packing, marking and documentation within and outside the packages shall be:</p> <p><u>Packing</u></p> <p>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.</p> <p><u>Marking</u> Marking shall be in accordance with international practice and shall be agreed with the Procuring Entity. The Goods shall be addressed for delivery to Guyana Power & Light, 40 Main Street, Georgetown, Guyana, South America.</p>
<p>5.1</p>	<p>Delivery, Transportation</p> <p><u>Documentation</u></p> <p>(a) For Imported Goods.</p> <p>Within 24 hours of shipment, the Supplier shall notify the Procuring Entity and the Insurance Company by cable or telex or fax or email, the full details of the shipment including Contract number, description of Goods, quantity, the vessel, the bill of lading number and date, port of loading, date of shipment, port of discharge, etc.</p> <p>The Supplier shall mail the following Original documents to the Procuring Entity with a copy to the insurance Company:</p> <p>(1) Supplier’s invoice indicating a description, quantity, unit price of the Goods and sum total;</p> <p>(2) Shipping order, railway receipt or truck receipt;</p> <p>(3) Warranty certificate of Manufacturer or Supplier;</p> <p>(4) Inspection certificate issued by the authorized inspection service, and the supplier's factory inspection report (if any);</p> <p>(5) Certificate of origin;</p> <p>(6) Certificate of conformity;</p>

	<p>(7) Full set of ocean on-board bills of lading, of air waybills or courier/parcel post Certificates consigned to the Procuring Entity;</p> <p>(8) Packing list identifying contents of each package, and clearly showing Shipping marks and package numbers, kind of package, contents, dimensions and Gross weights of each package in pounds or kilos.</p> <p>The above documents shall be received by the Procuring Entity at least two (2) weeks before arrival of Goods at the port or place of arrival and, if not received, the Supplier will be responsible for any consequent expenses.</p>
6.1	<p>Payment The method and conditions of payment to be made to the Supplier under this Contract shall be as follows:</p> <p>Payment for Goods supplied: Payment will be as follows:</p> <p>Advance Payment: Thirty (30) percent of value of the each shipment to be delivered shall be paid within thirty (30) days of the signing of the Contract, and upon submission of claim and a bank guarantee for equivalent amount valid until the Goods are delivered and in the form provided in the bidding documents or another form acceptable to the Procuring Entity.</p> <p>On Delivery: Fifty (50) percent upon receipt of shipping document of the Contract Price of the Goods shipped shall be paid upon submission of claim (Air Waybill / BL).</p> <p>On Acceptance: Twenty (20) percent of the Contract Price of Goods received shall be paid within thirty (30) days of receipt of the Goods supported by the acceptance certificate issued by the Procuring Entity.</p>
9.2	<p>Liquidated Damages The liquidated damage shall apply and they shall be equivalent to half of one percent (0.5) of the delivered price of the delayed Goods or unperformed services per each day of delay or part thereof until actual delivery.</p> <p>The maximum amount of liquidated damages shall be: 15 percent (15 %) of the delayed Goods or services contract price.</p>
11.2	<p>Settlement of Disputes The rules of procedure for arbitration proceedings pursuant to GCC Sub-Clause 11.2 shall be as follows:</p> <p><i>(a) Contract with foreign Supplier:</i> GCC 11.2 (a) Any dispute, controversy or claim arising out of or relating to this Contract, or breach, termination or invalidity thereof, shall be settled by arbitration in accordance with the UNCITRAL Arbitration Rules as at present in force.</p> <p><i>(b) Contracts with Supplier national of the Procuring Entity's country:</i> In the case of a dispute between the Procuring Entity and a Supplier who is a national of the Procuring Entity's country, the dispute shall be referred to adjudication or arbitration in accordance with the laws of Guyana</p> <p>(c) The Courts of Georgetown, Guyana, shall have exclusive jurisdiction in all the matters arising in the contract including execution of Arbitration Awards</p>
12.1	The governing law shall be the Laws of Guyana

Schedule of Requirements

IFB # GPL-PD-028-2022

Supply of: 2- 1 MVA Transformers

Item No.	Description	Quantity	Estimated Cost: (Guyana Dollars)	Estimated Cost: (Foreign Currency)
1.	1 MVA Transformer	2		

Kindly complete the above bid requirements including warranty details in the excel file spreadsheet template provided and submit two copies via email tender box as follows:

- (a) a pdf file format
- (b) an excel file format.

The other bid submissions required are listed below in line with our Evaluation criteria.

BID Delivery Schedule
IFB # GPL-PD-028-2022

Description	Named place of Destination as stated in the bid document	Earliest Delivery Date	Latest Delivery Date	Bidders offered Delivery date (to be specified by the bidder)	Bid Security required
Supply of 2- 1MVA Transformers	Georgetown Guyana	Immediately after signing of Contract or receipt of Purchase Order	<u>Fourteen (14) weeks after signing of Contract or receipt of Purchase Order</u>		2 % of Bid Price

QUALIFICATION INFORMATION

1. For individual bidders or individual members of a joint venture

1.1 Legal status of Bidder (*attach copy*).

Place of registration: _____

Principal kind of business: _____

Power of attorney for signing the Bid (*attach*).

1.2 Total volume of supplies executed for the last three (3) years in Guyana dollars or currency of bid:

_____ in 20__.

_____ in 20__.

_____ in 20__.

1.3 Supplies of a similar nature executed by the Supplier during the last two years (*not less than three (3) supplies*)

№	Name of Goods	Name of Clients, address and telephone	Contract Price

1.4 Copies of financial reports for the last three years (*balance sheets, loss and profit statements, auditors' reports, etc.*). List below and attach copies.

a. Evidence of access to financial resources (*cash in hand, lines of credit, overdraft facility etc.*). List below and attach copies of supporting documents.

b. Evidence of compliance with NIS, IRD and TIN Certificate and VAT Registration for Vatable item/s. (*attach supporting documents*).

c. Information on all claims, arbitration or other legal proceedings currently being examined or already settled.

2.0 Any other information required by the Procuring Entity to execute the Contract

2.1 The Supplier certifies that he meets all the qualification criteria and requirements, in accordance with normative legal documents.

I certify the authenticity of all the above information.

(Full name)

(Title)

(Signature and seal)

Dated on: _____ day of _____ 20__.
(Date)

SUPPLIER'S BID

Date: _____
IFB No: _____

TO: _____
(Name and address of Procuring Entity)

Dear Sir / Madam,

Having examined the bidding documents, including the Annexes and Addenda No _____ [*specify number*], the receipt of which is hereby acknowledged, we, the undersigned, offer to supply and provide _____ [*description of goods and related services*] in accordance with the requirements of the bidding documents to the total sum of _____ [*Total Amount of Bid in Words and Figures*], confirmed by the attached Price Schedule which is a part of this Bid.

- (a) We, including all subcontractors, regarding any part of the Contract, in accordance with the bidding documents, have no conflict of interests pursuant to sub clause 2 (i) of the Instructions to Bidders;
- (b) We, including all subcontractors, regarding any part of the Contract, in accordance with the bidding documents, have not been declared by the [authorized State body] [National Board] on procurement to be ineligible, or are not ineligible, in accordance with the legislation of Guyana.

We undertake, if our Bid is accepted, to supply the Goods, in accordance with a delivery schedule given in the Schedule of Requirements.

If our Bid is accepted, we undertake to furnish the Performance security in the form of _____ to the amount of _____, comprising _____% of the Contract Price in order to execute the Contract properly and within the time period(s) specified in the Bidding Documents.

We hereby confirm that this bid shall be valid during _____ days starting from the date established for bid opening, and it shall be binding until the expiry of the indicated period.

Prior to the preparation and execution of a formal Contract, this Bid together with your written confirmation of its acceptance shall form a binding Contract on the parties.

We understand that you are not bound to accept the lowest or any bid you receive.

Dated _____.

Duly authorized to sign the Bid _____
(Name of Supplier)

Supply Contract

THIS CONTRACT made the _____ day of _____ 20__

Between _____ [name of Procuring Entity] (hereinafter referred to as "the Procuring Entity"), on the one hand, and _____ [name of Supplier] from _____ [city and country of Supplier] (hereinafter referred to as "the Supplier"), on the other hand have come to an Agreement on the following:

The Procuring Entity has announced bid for procurement of goods and services, namely _____ [brief description of goods and related services] and has accepted the Supplier's bid for the supply of indicated goods and services to the sum of _____ [Contract Price in words and figures] (hereinafter referred to as "the Contract Price").

THIS CONTRACT WITNESSES AS FOLLOWS:

1. In this Contract, the terms and expressions have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall form the Contract and shall be deemed its integral part, viz.:
 - (a) Procuring Entity's Notification of Award;
 - (b) Bid and Price Schedule submitted by Bidder;
 - (c) Schedule of Requirements;
 - (d) Technical Specifications;
 - (e) General Conditions of Contract;
 - (f) Special Conditions of Contract;
 - (g) Other documents included in the Contract documents;
3. This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.
4. In consideration of the payments to be made by the Procuring Entity to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Procuring Entity to provide the Goods and Services, and remedy defects therein in conformity in all respects with the provisions of the Contract.
5. The Procuring Entity hereby agrees to pay the Supplier in consideration of the delivery of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract

IN WITNESS of the foresaid, the parties hereto have caused this Contract to be executed in accordance with the legislation of Guyana the day and year first above written in the beginning of the document.

For and on behalf of the Procuring Entity:

Signed by _____

Witnesses:

1. _____

2. _____

For and on behalf of the Contractor:

Signed by _____

Witnesses:

1. _____

2. _____

BID SECURITY
(Bank Guarantee)

Whereas _____ *[name of Bidder]* (hereinafter referred as "the Bidder") is ready to submit his bid dated _____ *[date of bid submission]* for the supply _____ *[name and/or description of goods]* (hereinafter referred as "the Bid"),

KNOW ALL PEOPLE, that WE _____ *[name of Bank]* from _____ *[name of country]*, having our registered office at the address _____ *[address of Bank]*, (hereinafter referred as "the Bank"), are bound to _____ *[name of Procuring Entity]* to the sum of _____, by which payment to the indicated Procuring Entity shall be made in whole and in a timely manner; the Bank is bound on behalf of its name, its successors and authorized persons. This is to confirm that the license issued to the Bank shall provide for activity on issuance of the guarantee, and the person(s) signing that guarantee is entitled to act on behalf of the Bank, and if the approval of Board of Directors, or of General Stockholders Meeting is required, it is already received and there is no other approval required.

THE CONDITIONS of this obligation are as follows:

1. If the Bidder:
 - (a) Withdraws his Bid during the period of bid validity specified by the Bidder on the Form of Bid; or
2. If the Bidder having received notice from the Procuring Entity that his bid is accepted within the period of bid's validity:
 - (a) fails or rejects to sign the Contract at the request of; or
 - (b) fails or rejects to furnish the performance security in accordance with the Instructions to Bidders;

We undertake to pay the Procuring Entity the above sum upon receipt of his first written request, without needing the Procuring Entity to show grounds or reasons of that request, provided that the sum requested by the Procuring Entity is due to him because of the occurrence of one or two or both conditions, specifying the condition or conditions occurred.

This guarantee shall remain in force during _____ days inclusive following the expiry of the bid validity period, and any request in respect thereof should reach the Bank not later than the abovementioned date.

(Full name of Bank's representative)

(Title)

(Signature and seal)

Dated on « ____ » day of _____ 20__.

Bid-Securing Declaration (*Not Applicable*)

[The Bidder shall fill in this Form if applicable pursuant to BDS.]

Date: _____

IFB No.: _____

Alternative No.: _____

To: _____

We, the undersigned, declare that:

1. We understand that, according to your conditions, bids must be supported by a Bid-Securing Declaration.
2. We accept that we will automatically be suspended from being eligible for bidding in any contract with the Procuring Entity for the period of time of _____ [insert number of months or years] starting on _____ [insert date], if we are in breach of our obligation(s) under the bid conditions, because we:
 - (a) have withdrawn our Bid during the period of bid validity specified by us in the Bidding Data Sheet; or
 - (b) having been notified of the acceptance of our Bid by the Procuring Entity during the period of bid validity, (i) fail or refuse to execute the Contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the ITB.
3. We understand this Bid Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of a copy of your notification of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of our Bid.
4. We understand that if we are a Joint Venture, the Bid Securing Declaration must be in the name of the Joint Venture that submits the bid. If the Joint Venture has not been legally constituted at the time of bidding, the Bid Securing Declaration shall be in the names of all future partners as named in the letter of intent.

Signed: _____ [insert signature of person whose name and capacity are shown] In the capacity of _____ [insert legal capacity of person signing the Bid Securing Declaration]

Name: _____ [insert complete name of person signing the Bid Securing Declaration]

Duly authorized to sign the bid for and on behalf of: [insert complete name of Bidder]

Dated on _____ day of _____, _____ [insert date of signing]

Manufacturer's Authorization

*[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. The Bidder shall include it in its bid, if so indicated in the **BDS.**]*

Date of Bid Submission(<i>day/ month/ year</i>):
IFB No: <i>[insert number of bidding process]</i>
Alternative No.: <i>[insert identification No if this is a Bid for an alternative]</i>

To: _____ *[insert complete name of Procuring Entity]*

WHEREAS

We _____ *[insert complete name of Manufacturer]*, who are official manufacturers of _____ *[insert type of goods manufactured]*, having factories at _____ *[insert full address of Manufacturer's factories]*, do hereby authorize _____ *[insert complete name of Bidder]* to submit a bid the purpose of which is to provide the following Goods, manufactured by us _____ *[insert name and or brief description of the Goods]*, and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 1.3 of the General Conditions of Contract, with respect to the Goods offered by the above firm.

Signed: _____ *[insert signature(s) of authorized representative(s) of the Manufacturer]*

Name: _____ *[insert complete name(s) of authorized representative(s) of the Manufacturer]*

Title: _____ *[insert title]*

Duly authorized to sign this Authorization on behalf of: _____ *[insert complete name of Bidder]*

Dated on _____ day of _____, 20____ *[insert date of signing]*

Letter of Acceptance
(Letterhead paper of Procuring Entity)

Date: _____

To: _____
(Name of Supplier)

(Address of Supplier)

We hereby notify you that your bid dated the ____ day of _____ 20__, for the supply of goods _____ (*description of goods*) up to a total of _____
(*Amount in figures and words*)

as amended and modified in accordance with the Instructions to Bidders is hereby accepted by our agency.

Simultaneously, we send you the Form of Contract and request you, pursuant to Clause 20.1 of the Instructions to Bidders, during seven (7) days to sign and date the Form of Contract, and return it at our address. Jointly with the signed Contract, we request you to furnish the performance security, in accordance with ITB Clause 20.2.

You hereby entrusted to start supply of the Goods, in accordance with the terms and conditions of a Contract.

Name of agency _____

Full name and Title _____

Signature of Authorized Representative _____

Power of Attorney

TO: _____ [*name of Procuring Entity*]

WHEREAS _____ [*name of Supplier*], who is
the Supplier _____ [*name and/or description of goods*].

do hereby authorize _____ [*name and address of Supplier's
Representative*] to submit the Bid, and sign the Contract based on *Invitation for Bids* for the abovementioned
goods to be supplied by us, and

[*Full name, title, signature for and on behalf of Supplier*]

Dated on « _____ » day of _____ 20__ (Seal)
(Date)

Note: The power of attorney must be drafted on a letterhead paper of the Supplier, and signed by a
competent person authorized by the Supplier. The Bidder shall include this power of attorney in his
Bid.

Bank Guarantee for Advance Payment

TO _____
[Name Procuring Entity]
[Name of Contract] _____

We, _____ [name of Bank] in accordance with the conditions of Contract which provide for advance payment (*name and address of the Supplier*), and whereas the Supplier has undertaken to provide you a Bank guarantee for advance payment to the Procuring Entity.

THEREFORE WE hereby affirm that we are the Guarantors, and are responsible to you on behalf of the Supplier to a total sum _____ GYD (*amount of guarantee in figures and words*), and we undertake to pay you on your first request and without objection on our part, and without the preliminary address to the Supplier, any sum or sums within the above limits.

We also agree that no alteration or addition in the terms of Contract which is subject to implementation, or any other contract documents which may be made by the Purchaser and the Supplier shall release us from obligations under the guarantee, and we hereby waive any notice of such alteration, or addition. We confirm that the license issued to the Bank shall provide for activity on issuance of a bank guarantee, and the person signing the guarantee is entitled to act on behalf of the Bank, and if the approval of Board of Directors or of General Stockholders Meeting is required, then it is already received, and there is no other approval required.

This guarantee shall be valid and remain in force from the date of advance payment received by the Supplier under the Contract, and until the date when the Procuring Entity receives delivery of the Goods in the amount of Advance Payment.

The Advance Payment referred to above must be received by the Supplier in its account number _____ [insert account number] at _____ [insert name and address of Bank].

This guarantee shall expire, at the latest, upon our receipt of the Goods equivalent to the amount of the Advance Payment, or on the _____ [insert date], whichever is later. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

(Full name of Bank's representative) (Title) (Signature and seal)

Dated on _____ day of _____ 20__.

Address of the Bank issued the guarantee: _____

Evaluation Criteria

The Procuring Entity's evaluation of bid will take into account, in addition to the Bid Price the following:

Phase 1 of Evaluation – Mandatory Requirements

Item #	Mandatory Requirements –<i>Completeness of Document</i> <i>Must Conform to applicable Administrative Compliances</i>	Responsive
1	Submission of Valid Company Registration	
2	Submission Of Valid Certificate Of Compliance – GRA (only applies to suppliers whose registered business address is within Guyana)	
3	Submission of valid certificate of compliance – NIS (only applies to suppliers whose registered business address is within Guyana)	
4	Copies of audited financial reports for the last three years	
5	Validity Of Bid – Including Documents that are properly signed	
7	Manufacture Authorization	
8	Bids Should Be valid for Ninety (90) Days	
9	Record of Past Experience for Supplies of similar materials	
10	Price and Delivery Schedule	
11	<u>Technical Specification – Compliance, completeness, legible, unambiguous</u>	
12	Country of Origin	

Note: Bids which do not comply with the mandatory requirements will NOT be considered for detailed Evaluation.

Bid that passes the mandatory requirements will be evaluated in detailed with points awarded as follows. The Bid that attracts the most points will be recommended.

Lack of submission of supplier's technical specification confirming to GPL's technical requirements shall be construed as non-compliance.

Phase 2 - Detailed Evaluation Criteria

Category	Criteria	Max Points	Evaluation Formula
Delivery Time	Immediate Delivery or Earliest possible Time After signing Contract or receipt of Purchase Order.	15	<i>Least Bid Delivery Time/Bid Delivery Time*15</i>
Warranty and Guarantee	Warranty Period.	20	The Bid that offers the maximum Warranty. <i>Warranty Period * 20</i>
Capitalization Cost	The Bid that offers the lowest TOC shall be considered as the best option.	65	<i>Lowest TOC (Lowest TOC / Bid TOC * 65)</i>
Total	Accumulated	100	

NOTES ON EVALUATION

- (a) *The Contract would be awarded to the Bidder whose bid is determined to be substantially technically responsive to the Bid Documents and who has offered the lowest evaluated Bid Price .*
- (b) *A penalty of immediate rejection of a bid or termination of contract will be applied upon discovery of misrepresentation of information.*

A penalty of 0.5% of the value of the order (or any portion thereof) for every completed calendar day that the products exceed the promised delivery period, to a maximum of 15% of the value of the order (or any portion thereof).

Law of Guyana: Procurement Act 2003

Section 39 – Subsection 6 (b)

(b) The procuring entity may grant a margin of preference not exceeding ten percent to tenders submitted by domestic contractors or for the benefit of tenders for domestically produced goods, provided that such preference is specified in the tender documents. If the lowest evaluated tender was submitted by a foreign tenderer, the evaluating committee will apply the margin of preference to the prices submitted by all foreign tenderers, for evaluation purpose. If, after applying the margin of preference, the lowest evaluated tender was submitted by a domestic tenderer, such tenderer shall be awarded the contract. Otherwise, the foreign tenderer who has submitted the lowest evaluated tender shall be awarded the contract.

Appendix I

Technical Specification

Three Phase Live Front Padmount Transformers

1. SCOPE

The design, manufacture, test, supply, delivery, and warranty of three-phase live front pad-mounted distribution transformers with separable insulated high voltage connectors, rated up to 1000 kVA, generally conforming to IEEE C57.12.34 except as specified otherwise herein.

This specification is intended to supplement IEEE C57.12.34, Additional or modifying statements made in this document shall override applicable sections. Where no reference is made in this specification, IEEE C57.12.34 shall apply.

Materials will be evaluated to ensure conformance with submitted manufacturer's drawings/documentation and relevant standards as listed within this specification.

2. APPLICABLE STANDARDS

Except where modified by this specification, the transformers shall be designed, manufactured and tested in accordance with the latest editions of the following standards (Table 1). The proponent may propose alternative standards, but shall demonstrate that they give a degree of quality and performance equivalent to or better than the referenced standards herein. Acceptability of an alternative standard is at the discretion of the Purchaser.

The Proponent shall furnish a copy of the alternative standard proposed along with the bid. If the alternative standard is not written in the English Language, a certified English Language translated version of the original standard shall be submitted with the bid.

Table 1: Applicable Standards

Item No.	ANSI/IEC Standards	Title
1	IEEE C57.12.34	IEEE Standard for Requirements for Pad-Mounted, Compartmental-Type, Self-Cooled, Three-Phase Distribution Transformers, 5MVA and Smaller; High Voltage 34.5 kV Nominal System Voltage and Below; Low Voltage, 15 kV Nominal System Voltage and Below”
2	IEEE C57.12.00	Standard General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers
3	IEEE C57.12.28;	“IEEE Standard for Pad-Mounted Equipment – Enclosure Integrity
4	IEEE C57.12.70	IEEE Standard Terminal Markings and Connections for Distribution and Power Transformers
5	IEEE C57.12.90	Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers Corrigendum 1:Editorial and Technical Corrections
6	IEEE C57.147	Guide for Acceptance and Maintenance of Natural Ester Fluids in Transformers
7	IEEE 386-2006	IEEE Standard for Separable Insulated Connector Systems for Power Distribution Systems Above 600 V
8	ASTM D3487	Standard Specification for Mineral Insulating Oil Used in Electrical Apparatus
9	NEMA TR 1	Transformers, Regulators, and Reactors
	IEC 60076	Power Transformers

In case of conflict, the order of precedence shall be:

- This Technical Specification
- IEEE standards
- Other Applicable and Recognised Standards for pad mounted distribution transformers.

3. INSTALLATION/SERVICE CONDITIONS

The installation conditions of the transformers shall be as follows:

1. Maximum altitude above mean sea level less than 1,000 m;
2. Maximum ambient air temperature 40°C;
3. Maximum daily average ambient air temperature 30°C;
4. Minimum ambient temperature 15°C; and
5. Maximum relative humidity 100%.

All outdoor materials, components and equipment shall be designed and protected for use in exposed, heavily polluted and salty, corrosive and humid tropical coastal atmospheric conditions.

4. ELECTRICAL SYSTEM CONDITIONS

The transformer shall be suitable to be installed in GPL’s primary distribution system, which has the following characteristics (Table 2).

Table 2: Characteristics of GPL’s Primary Distribution System

Nominal System Voltage, Frequency and Phase	High Voltage (HV) Side	13.8 kV, 60 Hz, 3φ-4-wire (Wye)
	Low Voltage (LV) Side	480 60 Hz, 3φ-3-wire (delta)
Voltage Class	15 kV	
Short circuit withstand Capability	As per IEEE C57.12.00, section 7.1.3	
Insulation Level		
Basic Insulation Level (BIL)	As per IEEE C57.12.00, Table 3	
Power Frequency withstand level – Dry 1 Minute	As per ANSI C57.12.00, Table 10	
Power Frequency withstand level – Wet 10 Seconds		
System Grounding		
Neutral Grounding	High Side	Primary distribution feeders from Distribution Substations are three phase delta and are grounded by a zig-zag transformer. Primary distribution feeders emanating from generator buses are wye and are grounded by the power plant neutral grounding system.
	Low Side	Solidly grounded.

5. TRANSFORMER RATING

The transformers shall be double wound, sealed type, oil immersed with natural oil and aircooling (ONAN), three phase (3φ), pad-mounted with rating of **1000 kVA**.

The polarity of all transformers shall be subtractive and shall be clearly indicated on the tank of the transformers.

The transformers are required to be equipped with four (4) HV and three (3) LV bushing terminations.

The design of the tank, fittings, bushings, etc., shall be such that it will not be necessary to keep the transformer energised to prevent deterioration as the transformers may be held in reserve and outdoors conditions for many years.

All transformers shall be rated in accordance with ANSI C57.12.20, section 3.

All transformers, inclusive of tap changer and other current carrying components, shall accept emergency overloading as per ANSI/IEEE C57.92, section 4.

6. TAPS AND VOLTAGE REGULATION

Transformers shall have the following voltage transformation ratio and tapping range:

- The nominal voltage rating shall be specified as:
13,800 grounded star - delta 480 Volts
 - Tolerance on the voltage ratio shall be in accordance with IEEE C57.12.00, section 9.1;
- Taps shall be provided in the high voltage winding (13.8 kV side), with two steps above and below the nominal voltage, 13.8 kV, having a step of 2.5%; and
- The bidder shall state in the technical schedule, the percentage regulation at full load, power factor 1.0 and at full load power factor 0.8 lagging. The primary and secondary voltage variation shall be based on a winding temperature of 85°C.

7. OVERCURRENT PROTECTION

The transformer rating 1000 kVA shall be equipped with an internally mounted low-voltage circuit breaker, rated to allow for full use of the transformer’s emergency capacity.

The operation of the LV breaker shall be coordinated such that any short circuit and/or overloading on the LV side of the transformer will first trip the LV breaker before the externally mounted HV protective links operate, taking the load off the transformer before the core and/or coil is/are thermally and/or mechanically damaged.

The operation of the protection devices mentioned above shall be indicated externally on the tank/cabinet, and the circuit breaker shall be made to be externally controlled.

The characteristics of the protection device shall allow for full usage of the transformer’s continuous rating and short-time

overload capabilities for emergency loading condition (120% of nominal kVA rating).

The Bidder shall submit the characteristic curves of the internal protection device with the bid. The characteristic curve shall also include the transformers' through-fault withstand capability curves or transformer damage curves.

8. BIL RATING

The transformer shall be rated minimum 95 kV BIL.

9. IMPEDANCE

The guaranteed minimum value of impedance measured at 85°C, on the nominal tap and at the rated voltage of the transformer shall be:

□ 3 - 5.2% for 1000 kVA transformer.

Tolerance for transformers' impedances shall be in accordance with section 9.2. of the IEEE C57.12.00.

10. SHORT CIRCUIT RATINGS

Bidders must submit all short circuit test results for compliance with section 7.1.3 of the IEEE C57.12.00.

11. LOSSES

The losses proposed by the Bidders shall be measured during routine tests. If the results from the routine tests indicate that either the copper or iron loss is more significant than the proponents' guaranteed values, the Purchaser shall have the right to reject the transformer(s).

Accuracies required for measuring losses shall be in accordance with IEEE C57.12.00, section 9.4.

The capitalization of guaranteed losses of the transformer shall be calculated and considered while evaluating the bids as the final bid price. The guaranteed values of no-load losses and load losses shall be stated in the bid, which should match the corresponding loss figures mentioned in the short circuit type test report submitted along with the offer by the bidder.

Liquidated damages will be applied to successful bidder for not achieving the quoted guaranteed figures.

The Total Ownership Cost formula is as follow:

$TOC = \text{Bid Price} + [(A \times NLL) + (B \times LL)]$ Where:

- i. TOC is the Total Owning Cost in US\$
- ii. Bid Price in US\$
- iii. A is the No Load-Loss Factor = 14.82 US\$/W
- iv. B is the Load-Loss Factor = 3.63 US\$/W
- v. NLL is the No-Load Loss in W
- vi. LL is the Load Loss in W

12. FLUX DENSITY

The flux density at any point of the magnetic circuit, core, and winding, when the transformer is connected on the centre tap and operating at normal voltage and frequency, shall be stated in the bid and shall not exceed 1.7 Tesla. The transformer must be capable of operating at 10% overvoltage at 97% of rated frequency without resulting in magnetic saturation of the transformer's core or the flux density exceeding 1.9 Tesla.

13. NOISE LEVEL

The acceptable audible sound levels for all transformers shall comply with NEMA TR1, table 0-3.

Bidders shall confirm procedure for noise level measurement according to IEEE C57.12.90 and submit audible sound levels test results with the bid document.

14. RADIO INFLUENCE VOLTAGE

Radio influence voltage of all transformers, contained herein, shall comply with NEMA TRI, section 0.03.1.

15. TAP CHANGING CHARACTERISTICS

Tap positions shall be numbered as shown in Table 3.

Table 3: Transformer tap positions

Tap 1	+5%
Tap 2	+ 2.5%
Tap 3	0% (Principal Tap)
Tap 4	-2.5%
Tap 5	- 5.0 %

The operating handle shall have provision for padlocking and shall give a visual indication of the tap position without unlocking.

Each tap-changer position and the tap voltage or percentage associated with voltage shall be identifiable by reference to nameplate information. All positions of the tap changer shall be operative positions.

Tap changer handles shall be fitted with covers having gaskets, so that sealing of the transformer under normal conditions is independent of the switch shaft gland.

16. CORE AND WINDINGS

The core and windings shall be vacuum processed to ensure maximum penetration of insulating fluid into the coil insulation system. While under vacuum, the windings will be energized to heat the coils and drive out moisture, and the transformer will be filled with preheated filtered degassed insulating fluid.

The core and winding shall be capable of withstanding mechanical shocks during transport, installation, and servicing.

16.1 CORE

The core shall be manufactured from burr-free, grain-oriented silicon steel laminations and shall be precisely stacked to eliminate gaps in the corner joints.

Provision to the design and construction of the transformer shall be made to prevent movement of the core and windings, relative to the tank, during transport, installation and short-circuits.

The design shall avoid the presence of pockets, which can prevent complete emptying of the oil in the tank through its drain plug.

16.2 WINDINGS

The winding conductor shall be of electrolytic copper or aluminium, to give the optimum economic and technical results of the transformers.

The windings shall be insulated with B-stage, epoxy coated, diamond pattern, insulating paper, which shall be thermally cured under pressure to ensure proper bonding of conductor and paper, and shall be free from any other insulating compounds that are liable to soften, ooze out, shrink or collapse, and non-catalytic and chemically inert in the transformer oil during normal servicing. The windings shall be uniformly insulated, and the LV neutral points shall be insulated for full line-to-line voltage.

The stacks of windings shall receive adequate shrinkage treatment, and the windings and connections are to be braced to withstand mechanical shocks during transport, switching, shortcircuit or other transient conditions.

17. BUSHINGS AND TERMINATIONS

17.1 BUSHINGS

Bushings shall be of the outdoor type and easily replaceable. Cemented types will **not** be acceptable. The bushings shall be sufficiently robust (mechanically) to withstand normal transport and erection hazards.

All bushings shall have a minimum creepage distance of 25 mm/kV for maximum phase-to-phase system voltage and shall have a continuous rating of 200 % of the transformer capacity rating.

17.2 BUSHING LABELS

HV bushings shall be labelled H0, H1, H2 and H3.

LV bushings shall be labelled X1, X2 and X3 in accordance with IEEE C57.12.70 standards.

Marking letters shall be at least 12 mm (or 1/2 inch) high. The means of marking shall conform to the requirements of the section on Labels in this specification.

Transformers shall be constructed with either a 5-legged core or a triplex core to mitigate ferroresonant tank heating.

The core shall be constructed from high grade, non-aging, cold rolled grain-oriented silicon steel laminations or superior material.

18. EARTHING TERMINALS

All transformers shall be provided with two earthing/grounding terminals comprising an M12 isometric bolt and nut, which shall be non-ferrous material. It shall include a spring washer and a lock washer.

External connecting strip(s) between earthing/grounding terminal and neutral bushing(s) **is/are** required.

19. HIGH AND LOW VOLTAGE TERMINAL CONFIGURATION

Transformers shall comply with C57.12.34 Figure 4(a) (staggered arrangement), Figure 1 and Figure 2 for radial-feed transformers.

20. LOW-VOLTAGE TERMINALS

Terminals shall be constructed per IEEE C57.12.34, Section 8.7.3 with an additional ground pad near the low voltage.

21. LIGHTING ARRESTORS – HV SIDE OF TRANSFORMER

The lightning arrestors shall be capable of discharging lightning and switching surges and temporary power frequency over voltages and shall be capable of discharging over voltages occurring during switching of unloaded transformers and long lines.

The Arrestors shall be capable of withstanding Maximum Continuous Operating Voltages (M.C.O.V) and rate for operation in 15 kV class distribution system. The reference current of the arrestors shall be of such value to eliminate the influence of grading and stray capacitance on the measured reference voltages.

These arrestors shall be of Heavy Duty, Station Class / Distribution Class and Gapless Zinc Oxide type and shall be hermetically sealed units suitable for outdoor installation and mounting on distribution transformers. Additionally, the arrestors shall be suitable for heavily polluted atmospheric conditions as mentioned in section 3 on page 6.

22. PRESSURE RELIEF VALVE

The pressure relief valve provided as per C57.12.34, 8.9.2, shall include an orange or red indicator that becomes visible only after the valve has vented. The valve shall be covered by a cap with a pull ring which will separate from the assembly during venting, revealing the orange or red indicator.

23. TRANSFORMER OIL

The transformers shall be supplied filled with class 1 mineral oil conforming to ASTM D3487.

The complete first filling shall be of new oil free from inhibitors and additives. The dielectric strength of the oil shall not be less than 40kV. If an antioxidant inhibitor is recommended, its use shall be subject to the Purchaser's approval.

24. TANK COVER

The bidder shall state if other than bolted construction is used.

25. TRANSFORMER ANCHOR TABS

Four tabs shall be provided on the tank for mounting the transformer to the pad.

26. HANDHOLE

The tank shall include a handhole to access internal components for testing. The handhole shall have a cover that can be unbolted from within the terminal compartments to prevent unauthorized access.

27. FITTINGS

The following standard fittings shall be provided:

- rating, diagram, and terminal marking plate;
- tank grounding terminal;
- lifting lugs;
- oil level indicator;
- manual pressure relief device; and □ drain/sampling valve with plug.

The fittings and accessories listed above are only indicative and any other fittings and accessories according to the applicable standards herein shall be provided for the transformers.

28. RATING AND CONNECTION PLATE

Each transformer shall be provided with anodized aluminium laser engraved nameplate, in accordance with IEEE C57.12 - Nameplate A and C as necessary. Additionally, Proponents shall ensure that the following attributes are indicated on the aforementioned nameplate and conform to the requirements of the section on Labels in this specification:

- standard to which it is manufactured and tested;
- identification of internal short-circuit and overload protection devices;
- type of cooling (ONAN);
- rated currents in A;
- chopped wave (short time) impulse voltage withstand level in kV;

- power frequency withstand voltage in kV;
- percentage impedance at 85°C;
- load loss in kW at rated current;
- no-load loss in kW at rated voltage and frequency;
- continuous ambient temperature at which ratings apply in °C (40);
- top oil and winding temperature rise at rated load in °C;
- winding connection diagram;
- total mass (core, windings, and oil) in kg;
- mass of core and windings in kg;
- volume of oil in litres;
- Oil with less than 2ppm of PCB; and
- name of the purchaser (Property of Guyana Power & Light Inc.)

29. SURFACE TREATMENT

The transformer tank and all accessories shall be treated in accordance with IEEE C57.31 to ensure enclosure and equipment integrity.

30. SUPPRESSION OF HARMONICS

Each transformer's core shall be designed with attention to the suppression of harmonic voltages and currents, as per IEEE Std 519-2014 in Table 1 for bus voltage between 1 kV and 69 kV and Table 2 for current distortion limits for systems rated 120 V through 69 kV.

Proponents shall submit results for harmonic suppression tests for voltage and current distortions.

31. TESTS

In addition to the routine tests required in IEEE C57.12.00, as per section 8 and Table 18, the following additional tests shall be carried out on all transformers. The following routine measurements and tests shall be carried out and results shall be submitted to the Purchaser upon delivery:

- a) Measurement of winding resistance at the nominal and extreme tap positions for each transformer provided;
- b) Measurement of impedance;
- c) Measurement of no-load loss and no-load currents at full, 90% and 110% voltages;
- d) Induced overvoltage withstand test;
- e) Separate source voltage withstand tests on HV and LV windings;
- f) Magnetic balance test;
- g) Polarization Index Test. The index shall be not less than 1.5;
- h) Oil leakage test: The criterion of leakage shall be discolouration by oil of whitewash applied externally to suspected parts at an oil temperature of 90°C or other method approved by the Purchaser;
- i) Bushings and oil shall be subject to the following routine tests.
 - a. bushing routine tests
 - b. oil dielectric and moisture content test.

Routine test certificates shall include in addition to the test results, the Purchaser's order number, the transformers' serial numbers, outline drawing number and transformer kVA rating.

Upon acceptance of Tender, the Manufacturer/Proponent shall provide results of standard design type tests required in Table 18 of IEEE C57.12.00.

32. COMPLIANCE WITH SPECIFICATION

The transformers shall comply in all respects with the requirements of this specification. However, any minor departure from the provisions of the specification shall be disclosed at the time of tendering in the Non-Compliance Schedule in this document (see page 20).

33. COMPLIANCE WITH REGULATIONS

All the transformers/equipment shall comply in all respects with the Laws of Guyana Governing the Importation of Commercial Items and/or Goods.

The equipment and connections shall be designed and arranged to minimize the risk of fire and any damage that might be caused in the event of a fire.

34. QUALITY ASSURANCE, INSPECTION AND TESTING

34.1 GENERAL

To ensure that the supply and services are in accordance with the Specification herein, with the regulations of Guyana and with relevant authorized international standards, the Proponent shall have in place suitable Quality Assurance Programmes and Procedures to ensure that all activities are being controlled and documented, as necessary.

The quality assurance arrangements shall conform to the relevant requirements of ISO 9001 or ISO 9002, as deemed appropriate by the Purchaser and the Proponent.

The systems and procedures that the Proponent will use to ensure that the supply complies with the specified requirements, shall be defined in the Proponent's Quality Plan.

The Proponent shall operate systems that implement the following:

Hold Point "A stage in the material procurement or workmanship process beyond which work shall not proceed without the documented approval of designated individuals or organisations."

The Purchaser's written approval is required to authorise work to progress beyond the Hold Points indicated in approved Quality Plans.

Notification Point "A stage in material procurement or workmanship process for which advance notice of the activity is required to facilitate witness."

If the Purchaser's representative does not attend after receiving documented notification in accordance with the agreed procedures and with the correct period of notice, then work may proceed.

34.2 QUALITY ASSURANCE SYSTEM

Unless the Proponent's Quality Assurance System has been audited and approved by the Purchaser, a Quality Assurance System shall be submitted to the Purchaser for approval within a minimum of One (1) month from the placement of order, or such other period as shall be agreed with the Purchaser. The Quality Assurance System shall provide a description of the Quality Control System for the supply and shall, unless advised otherwise, shall include, but not limited to the following details:

1. The structure of the organisation;
2. The duties and responsibilities assigned to staff to ensure quality of work;
3. The system for purchasing, taking delivery and verification of the specifications of raw materials;
4. The system for ensuring the quality of workmanship
5. The system for control of documentation;
6. The system for the retention of records; and
7. The arrangement for the Proponent's internal auditing.

34.3 QUALITY PLANS

The Quality Plans shall set out the activities in a logical sequence and, unless advised otherwise, shall include, but limited to the following:

1. An outline of the proposed programme sequence;
2. The duties and responsibilities assigned to staff ensuring the quality of work;
3. Hold and notification points;
4. Submission of engineering documents required by the specification;
5. The inspection of materials and components on receipt;
6. Reference to the Supplier's procedures appropriate to each activity;
7. Inspection during fabrication and assembly; and
8. Final inspection and test.

34.4 INSPECTION AND TESTING

The Purchaser shall have free entry at all times, while work on the order is being performed, to all parts of the manufacturer's working area which are in relation to the processing of the transformers ordered. The Manufacturer/Proponent shall afford the Purchaser without charge, all reasonable facilities to assure that the transformers being furnished are in accordance with the specifications herein.

The equipment shall have successfully passed all tests as described in Section 31.

The Purchaser reserves the right to reject an item of the transformer if the test results do not comply with the values specified herein.

Tests, including any retests required, shall be carried out by the Supplier at no extra charge, at the manufacturer's works. Full details of the proposed methods of testing, including connection diagrams, shall be submitted to the Purchaser by the Supplier for approval, at least one month before testing.

All costs in connection with the testing, including any necessary re-testing, shall be borne by the Manufacturer/Proponent. Any cost incurred by the Purchaser in connection with inspection and re-testing as a result of the failure of the transformer or any of its components under test or damage during transport or offloading shall be to the account of the Proponent.

The Proponent shall submit to the Purchaser three signed copies of the test certificates, giving the results of the tests as required. No materials shall be dispatched until the test certificates have been received by the Purchaser and the Proponent has been informed that they are acceptable.

The test certificates must show the actual values obtained from the tests, in the units used in this specification, and **not** merely confirm that the requirements have been met.

No inspection or lack of inspection or approval by the Purchaser's Representative of equipment or materials whether supplied by the Proponent or a Sub-Proponent, shall relieve the Proponent from his/her liability to complete the contracted works in accordance with the contract would exonerate him/her from any of his/her guarantees.

34.5 GUARANTEE

The Proponent shall guarantee the following:

- Quality and strength of materials used;
- Satisfactory operation during the guarantee period of one (1) year from the date of commissioning, or 18 months from the date of acceptance of the equipment by the Purchaser following delivery, whichever is the earlier. The Purchaser shall advise the Proponent of the date of commissioning;
- Performance figures as supplied by the Proponent in the Technical Data Schedule, the guaranteed copper and iron losses and other particulars;
- The offered surface treatment shall protect the treated metal from corrosion for a period of not less than ten (10) years from the date of delivery.

35. SPARE PARTS AND SPECIAL TOOLS

The Proponent shall provide a list of recommended spare parts and their individual prices and shall include HV and LV bushings and bi-metallic connectors for HV and LV bushings. This list shall identify all essential spares and consumable items for any recommended maintenance for a period of five (5) years after commissioning.

The Purchaser may order all or any of the spares parts listed at the time of placement of order.

A spare parts catalogue with price list shall be provided and this shall form part of the drawings and literature to be supplied with the bid.

The Proponent shall give an assurance that spare parts and consumables will continue to be available through the life span of the equipment/transformers, which shall be 25 years minimum. However, the Proponent shall give a minimum of 12 months' notice to the Purchaser, in the event that the Proponent or any Sub-supplier, plan to discontinue manufacturing of any component used in the transformers.

Any spare apparatus, parts or tools shall be subjected to the same specification herein, tests and conditions as similar main material supplied. They shall be strictly interchangeable and suitable for use in place of the corresponding parts supplied with the transformer and must be suitably marked and numbered for identification.

Spare parts shall be delivered suitably packaged and treated for long periods in storage. Each package shall be clearly and indelibly marked with its contents, including a designation number corresponding to the spare parts lists in the operation and maintenance instructions.

36. LABELS

All apparatus shall be clearly labelled indicating, where necessary, its purpose and service positions.

The material of all labels and plates, their dimensions, legend and the method of printing shall be subject to the approval of the Purchaser.

Colours shall be permanent and free from fading. All labels and plates for outdoor use shall be of non-corrosive material.

They shall be engraved in English. Nameplates shall carry all the applicable information specified in the applicable items of the Standards and other details as required in this specification. No scratching, corrections or changes will be allowed on nameplates.

Wherever possible the equipment shall carry the markings "**THIS EQUIPMENT IS PROPERTY OF GPL Inc.**".

37. DECALS

“Danger do not open” decal on exterior transformer doors

“Danger do not touch” decal on interior transformer doors Typical decals shown in Appendix A.

38. SUBMITTALS REQUIRED WITH THE BID

The following shall be required in duplicate of three (3) copies:

1. completed technical data schedule for each type and rating of the transformer;
2. descriptive literature giving full technical details of equipment offered;
3. Outline dimension drawings for each major component, general arrangement drawing showing component layout and general schematic diagrams;
4. type test certificates, where available, and sample routine test reports for each type and rating of the transformer;
5. summary reference list of customers already using equipment offered during the last 5 years with particular emphasis on units of similar design and rating;
6. details of manufacturer's quality assurance standards and programme and ISO 9000 series or equivalent national certification;
7. deviations from this specification. Only deviations approved in writing before placement of order shall be accepted; and
8. list of recommended spare parts and consumable items for five years of operation with prices and spare parts catalogue with price list for future requirements.

39. NON-COMPLIANCE SCHEDULE

On this schedule, the Proponent shall provide a list of non-compliance with this specification, documenting the effects that such non-compliance is likely to have on the transformer/equipment/component life span and operating characteristics. Each noncompliance shall be referred to the relevant specification clause.

Clause No.	Non-Compliance

40. TEST CERTIFICATE SCHEDULE

On this schedule, a list of the test certificates shall be included with the bid. This list shall include the certificates for the type tests (see page **Error! Bookmark not defined.**) and sample routine test reports. Each certificate listed shall be referred to the relevant specification clause.

Clause No.	Type Test Certificate or Routine Test Report

41. SHIPPING

The Manufacturer/Proponent shall prepare the transformers for shipping in such a manner as to protect from them from damage or deterioration during shipping and storage, and shall be responsible for, and make good, any and all damage due to improper preparation for loading, shipment, and storage.

All transformers shall be shipped on open sided trucks or trailers, in such a manner as to facilitate off-loading, handling and storage.

The transformers shall be shipped securely banded with a steel strap or approved synthetic strap to a pallet. The pallet shall be constructed to accept two fixed 195 mm forks spaced either 65mm or 320 mm apart. At least 90 mm clearance shall be provided under each transformer pallet and the bottom of the pallet must not be fully covered in order to facilitate the use of pallet jacks.

42. TECHNICAL SCHEDULE

Below is a sample of the Technical Schedule that is applied to each transformer separately.
 Proponents must complete this schedule for each transformer to be considered for evaluation.
 Failure to complete this schedule will result in bid disqualification.

Item No.	Description	Unit	GPL	Bidder
General				
1	Rated Power (kVA _n - ONAN Rated)	kVA	1,000	
2	Rated Frequency	Hz	60	
3	Voltage class	kV	15	
4	Rated High Voltage (grounded star)	V	13,800	
5	Rated Low Voltage (delta)	V	480	
6	Number of Phases		3	
7	Vector Group		YNd11	
8	Characteristic curves of the internal protection device provided.	YES/NO	YES	
9	Characteristic curves include the transformers' throughfault withstand capability curves or transformer damage curves.	YES/NO	YES	
10	A list of recommended spare parts and their individual prices is provided.	YES/NO	YES	
11	Manufacturer			
12	Manufacturer's data sheet supplied	YES/NO	YES	
Type of Transformer				
13	Transformer Type - Double wound, sealed type, oil immersed	YES/NO	YES	
14	Cooling Type		ONAN	
15	Transformer polarity		subtractive	
16	Number of HV bushing terminations		3	
17	Number of LV bushing terminations		4	
18	It is not necessary to keep the transformer energised to prevent deterioration.	YES/NO	YES	
Taps & Voltage Regulation				
19	No. of Tap Positions/Steps	No.	5	
20	Max Tap Position (above nominal)	%	5	
21	Min Tap Position (below nominal)	%	-5	
22	Tap Steps	%	2.5	
23	Transformer pad mounted.	YES/NO	YES	
24	Voltage Regulation at Full Load and Power Factor of 1	%	≤ 1	
25	Voltage Regulation at Full Load and Power Factor of 80%	%	< 2.5	
26	Can the tap changer switch be Locked	YES/NO	YES	
27	Tap changer handles are fitted with covers having gaskets, so that sealing of the transformer under normal conditions is independent of the switch shaft gland.	YES/NO	YES	

Item No.	Description	Unit	GPL	Bidder
28	Tap changer catalogue details attached	YES/NO	YES	
Overcurrent Protection				
29	Internally mounted LV Circuit Breaker	YES/NO	YES	
30	Operation of protective device are indicated externally	YES/NO	YES	
31	The Circuit Breaker is controllable externally	YES/NO	YES	
32	Characteristic curves of protective devices are submitted	YES/NO	YES	
33	Characteristic curve includes transformer damage curves	YES/NO	YES	
Impedance & Short Circuit Rating				
34	Impedance measured at 85 °C, nominal tap position and rated voltage.	%	3 - 5.2	
35	Rated Short-circuit withstand Current	kA	25pu x In	
36	Rated Short-circuit Current withstand duration (both sides)	s	2	
37	X/R Ratio	%	1.5 to 5.7	
Losses				
38	No Load Current	A	(1% to 2%) x In	
39	No-load Loss at Nominal Tap Position and Rated Primary Voltage	W	900 to 1800	
40	Load Loss at Nominal Tap Position and Rated Load Current	W	6000 to 10000	
Flux Density				
41	Magnetic Flux Density at nominal tap, operating at normal voltage and frequency.	Tesla	≤ 1.7	
42	Magnetic Flux Density (one minute at normal tap) (10% overvoltage at 97% of rated frequency)	Tesla	≤ 1.9	
Coils & Windings				
43	The core and windings are to be vacuum processed.	YES/NO	YES	
44	The core and windings are capable of withstanding mechanical shocks.	YES/NO	YES	
45	The core is manufactured from burr-free, grain-oriented silicon steel laminations and was precisely stacked to eliminate gaps in the corner joints.	YES/NO	YES	
46	The windings are insulated with B-stage, epoxy coated, diamond pattern, insulating paper.	YES/NO	YES	
47	Conductor for HV winding - Manufacturer/Supplier			
48	Type of Winding material on HV Side		Copper/Aluminum	
49	Conductor for LV winding - Manufacturer/Supplier			
50	Type of Winding material on LV Side		Copper/Aluminum	
Bushings & Terminations				
51	Busing Type		outdoor type and easily replaceable	
52	Type of bushing insulator - HV		porcelain	
53	Type of bushing insulator - LV		porcelain	

Item No.	Description	Unit	GPL	Bidder
54	Creepage Distance (minimum) line to line	mm/kV	25	
55	Creepage Distance (minimum) line to ground	mm/kV	44	
56	15 kV class lightning arrester electrically connected to each HV bushing and mechanically secured onto the tank.	YES/NO	YES	

57	Number of earthing/grounding terminals comprising of nonferrous material M12 isometric bolt and nut which include a spring washer and a lock washer.		2	
58	Voltage rating HV Bushing (Voltage Class)	kV	15	
59	Voltage rating LV Bushing (Voltage Class)	V	600	
60	Current rating HV Bushing	A	2 x In of transformer	
61	Current rating LV Bushing	A	2 x In of transformer	
62	HV Bushing BIL	kV	95	
63	HV Busing Power Frequency withstand Voltage - Dry	kV	35	
64	HV Busing Power Frequency withstand Voltage - Wet	kV	30	
65	LV Busing Power Frequency withstand Voltage - Dry	kV	35	
66	LV Busing Power Frequency withstand Voltage - Wet	kV	30	
67	Type and Metal used in HV Terminal		Copper	
68	Type and Metal used in LV Terminal		Copper	
69	Type and Metal used in Earth Terminal		non-ferrous	
70	Minimum phase to phase clearance HV	mm	300	
71	Minimum earth to phase clearance	mm	140	
72	Minimum phase to phase clearance LV	mm	140	
73	Spring and lock washer included	YES/NO	YES	
Transformer Oil				
74	Oil type		Class 1 mineral oil conforming to ASTM D3487	
75	Dielectric strength of the oil	kV	> 40	
Overloading				
76	Duration of 25% Overload at Service Conditions	minutes	180	
77	Duration of 50% Overload at Service Conditions	minutes	90	
Installation/Service Conditions				
78	Maximum altitude above mean sea level	m	< 1,000	
79	Maximum relative humidity	%	100	
80	Design maximum outdoor temperature	°C	40	
81	Design continuous ambient temperature	°C	30	
82	Minimum ambient temperature	°C	15	
83	Maximum temperature rise over ambient temperature:			
	a) In oil by thermometer	°C	65	
	b) In winding by resistance measurement	°C	65	
Item No.	Description	Unit	GPL	Bidder
	c) Limit for hot spot temperature for which the transformer is designed	°C	<80	
	d) Temperature gradient between windings and oil	°C	20	
	e) Type and details of winding hot spot temperature detector		Resistance temperature detector	
	f) Type of maximum winding temperature indicator		analogue/ digital	
84	Average Winding Temperature Rise	°C	65	
85	Maximum Winding Temperature Rise	°C	105	
Fittings				
86	Rating, diagram and terminal marking plate	YES/NO	YES	
87	Tank grounding terminal	YES/NO	YES	
88	Lifting lugs	YES/NO	YES	

89	Oil level indicator			
89	Manual pressure relief device	YES/NO	YES	
90	Drain/sampling valve with plug	YES/NO	YES	
Tank				
91	Tank material		mild steel pates	
92	Thickness of tank	mm	≥ 4	
93	Thickness of top and bottom covers	mm	≥ 6	
94	Pressure relief valve can be operable manually by hot stick.	YES/NO	YES	
95	Painting method details attached	YES/NO	YES	
Tank (for information purposes only)				
96	Tank Width	mm		
97	Tank Height	mm		
98	Tank Dept (length)	mm		
99	Weight of Core and Windings	kg		
100	Weight of Tank	kg		
101	Weight of Oil at 20 °C	kg		
102	Total weight of Transformer without oil	kg		
103	Shipping weight of Transformer	kg		

Name:.....

Affix Company
Seal Below

Signature:.....

Date:.....

End of Technical Specification

Appendix II

Please see attached Spreadsheet, kindly complete schedule and submit same in PDF and Excel format.