



JAMAICA PUBLIC SERVICE COMPANY, LIMITED

BELLEVUE 138/69KV SUBSTATION PROJECT

REQUEST FOR PROPOSALS

The Supply of -

STEEL STRUCTURES AND BUSWORK FOR INSTALLATION AT BELLEVUE SUBSTATION

RFP # 987999

**Instructions to Bidders
General Conditions of Contract
Special Conditions of Contract
Exhibits
Bid Form
Technical Specifications
Schedules**

JUNE 2024

*Purchasing and Customs
113 Washington Boulevard Kingston
JPS Co. Ltd., Jamaica*

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PART 1
INSTRUCTIONS TO BIDDERS

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Introduction

IB.01 a. Background

The Jamaica Public Service Company has embarked on 60/80MVA Interbus Transformer Installation Project at Bellevue Substation in the parish of St. Ann. The existing 138kV bus will be expanded via a low-profile design that uses 3" aluminum pipe conductors. It will see the addition of two (2) 138kV circuit breakers, four (4) 138kV switches and three (3) 138kV potential transformers (PTs). Two (2) 69kV circuit breakers and four (4) 69kV PTs will be added to the existing 69kV bay.

In order to satisfy this Installation at Bellevue substation it has been agreed that Steel Structures and Buswork shall be procured.

b. Source of Funds

The Jamaica Public Service Company Limited (JPS) will fund the purchase of the Steel Structure and Busworks under the North Coast Voltage Security Improvement Project. An International Bank mutually agreed between JPS and the successful tender will effect payments to the Contractor.

IB.02 Eligible Bidders

IB.02.1 This invitation for Bids is open to all suppliers from eligible source countries as defined under the Guidelines for Procurement of the JPS Purchasing Department list of suppliers.

IB.03 Eligible Goods and Services

IB.03.1 All goods and ancillary services to be supplied under the Contract shall have their origin in eligible source countries, be as defined under the Guidelines for Procurement of the JPS Purchasing Department and all expenditures made under the Contract will be limited to such goods and services.

IB.03.2 For purposes of this clause, "origin" means the place where the goods are mined, grown or produced or from which the ancillary services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembling of components, a commercially recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.

IB.03.3 The origin of goods and services is distinct from the nationality of the Bidder.

IB.04 Cost of Bidding

IB.04.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Jamaica Public Service Company Limited (JPS), hereinafter referred to as "the Purchaser," will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

The Bidding Documents

IB.05 Content of Bidding Documents

IB.05.1 The goods required, bidding procedures and contract terms are prescribed in the bidding documents. In addition to the invitation for Bids, the Bidding Documents include:

- a) Instructions to Bidders;
- b) General Conditions of Contract;
- c) Special Conditions of Contract;
- d) Exhibits: Form of Agreement
 Form of Purchase Order
- e) Bid Form
- f) Technical Specifications
- g) Schedules: Schedule of Requirements
 Schedule of Prices
 Schedule of Technical Data
 Schedule of Information
 Schedule of Deliveries

IB.05.2 The Bidder is expected to examine all instructions, forms, terms and specifications in the Bidding Documents. Failure to furnish all information required by the Bidding Documents or submission of a bid not substantially responsive to the Bidding Documents in every respect will be at the Bidder's risk and may result in the rejection of its bid.

IB.06 Clarification of Bidding Documents

IB.06.1 A prospective Bidder requiring any clarification of the Bidding Documents may notify the Purchaser in writing or by email at the Purchaser's mailing address indicated in the Invitation for Bids. The Purchaser will respond in writing to any request for clarification of the Bidding Documents, which it receives no later than seven (7) days prior to the deadline for submission of bids prescribed by the Purchaser.

Points of Contact (POC)

All communications and questions with JPS regarding this RFP must be directed to the following Point of Contact (POC):

Name: **Mr. Kolonje McKenzie**
CC: **Mr. Aldeen Morris**
Address: Jamaica Public Service Company Limited
113 Washington Boulevard
Kingston 20, Jamaica WI
Email: komckenzie@jpsco.com
CC: apmorris@jpsco.com

Unauthorized communications concerning this RFP with other Company employees, executives of contractors may result in immediate disqualification.

All communications and questions should be submitted electronically to the POC's email address. In order to ensure consistency and quality of information provided to Bidders, responses to questions received will be communicated to all participants without revealing the source of the inquiries.

Only written responses will be considered official and binding. JPS reserves the right, at its sole discretion, to determine appropriate and adequate responses to questions and requests for clarification.

A Bidder contact should be provided for all questions and clarifications arising from the Proposal Queries should include:

- (a) Company's name, company address and phone number, contact person, email address, position
- (b) References to specific points within this RFP using the Section number as reference
- (c) Clear and concise questions

IB.07 Amendment of Bidding Documents

IB.07.1 At any time prior to the deadline for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the Bidding Documents by amendment.

IB.07.2 The amendment will be notified in writing to all prospective Bidders, which have received the Bidding Documents and will be binding on them.

- IB.07.3 In order to afford prospective Bidders reasonable time in which to take the amendment into account in preparing their bids, the Purchaser may, at its discretion, extend the deadline for the submission of bids.
- IB.07.4 The Purchaser reserves the unilateral right to cancel or reissue the RFP at its sole discretion. Bidders will respond to the final written RFP and any exhibits, attachments and amendments.

Preparation of Bids

IB.08 Language of Bid

- IB.08.1 The Bid prepared by the Bidder and all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, shall be written in the English language.

IB.09 Documents Comprising the Bid

- IB.09.1 The bid prepared by the Bidder shall comprise the following components:
- a) A Bid Form and a Schedule of Prices completed in accordance with Clauses IB.10, IB.11 and IB.12;
 - b) Documentary evidence established in accordance with Clause IB.13 that the Bidder is qualified to perform the contract if its bid is accepted;
 - c) Documentary evidence established in accordance within Clause IB.14 that the goods and ancillary services to be supplied by the Bidders conform to the Bidding Documents
 - d) Drawings

IB.10 Bid Form

- IB.10.1 The Bidder shall complete the Bid Form and the appropriate Schedule of Prices furnished in the Bidding Documents, indicating for the goods to be supplied, a brief description of the goods, quantity and prices.
- IB.10.2 For the purpose of granting a margin of domestic preference pursuant to Clause IB.26, the Purchaser will classify a bid, when submitted, in one of three groups, as follows:

- (a) Group A: Bids offering goods manufactured in the Purchaser's country for which the domestic value added in the manufacturing cost is not less than 40% of the ex-factory price;
- (b) Group B: Bids offering goods manufactured in the Purchaser's country for which the domestic value added in the manufacturing cost is less than 40% of the ex-factory price, and for goods of foreign origin already located in the Purchaser's country; and
- (c) Group C: Bids offering goods of foreign origin to be imported by the Purchaser directly or through the supplier's local agent.

IB.11 Bid Prices

IB.11.1 The Bidder shall indicate on the Schedule of Prices attached to these documents the unit prices and total Bid Prices of the goods it proposes to supply under the Contract:

IB.11.2 Prices indicated on the Schedule of Prices shall be entered separately in the following manner:

- a) For goods offered from abroad:
 - (i) The price of the goods quoted on Flat Rack CIF port-of-entry in the Purchaser's country inclusive of all duties, fees and taxes incurred in exporting country.
- b) For goods offered in the purchaser's country:
 - (i) The price of goods quoted to final destination of the Purchaser request.

IB.11.3 Fixed price: Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account. A bid submitted with an adjustable price quotation will be treated as non-responsive and rejected, pursuant to Clause IB.24.

IB.12 Bid Currencies

IB.12.1 Prices shall be quoted in the following currencies:

- (a) For goods and services which the Bidder will supply from outside the Purchaser's country, the prices shall be quoted in US dollars.

IB.12.2 Further, a Bidder expecting to incur a portion of its expenditures in the performance of the Contract in more than one currency, and wishing to be paid accordingly, shall so indicate in its bid. In such case, either

- (i) The bid shall be expressed in different currencies and the respective amounts in each currency together making up the total price, or
- (ii) The total bid price shall be expressed in one currency and payments required in other currencies expressed as a percentage of the bid price along with the exchange rate used in such calculation.

IB.13 Documents Establishing the Bidder's Eligibility and Qualifications

IB.13.1 Pursuant to Clause IB.09, the Bidder shall furnish, as part of its bid, documents establishing the Bidder's qualifications to perform the Contract if its bid is accepted.

IB.13.2 The documentary evidence of the Bidder's Qualifications to perform the Contract if its bid is accepted, shall establish to the Purchaser's satisfaction:

- (a) That, in the case of a Bidder offering to supply goods under the Contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorized by the goods' manufacturer or producer to supply the goods in the Purchaser's country;
- (b) **That the Bidder has the financial, technical and production capability necessary to perform the Contract.**

IB.14 Documents Establishing Goods' Eligibility and Conformity to Bidding Documents

IB.14.1 Pursuant to Clause IB.09, the Bidder shall furnish, as part of its bid, documents establishing conformity to the Bidding Document of all goods and services, which the Bidder proposes to supply under the Contract.

IB.14.2 The documentary evidence of the goods and services shall consist of a statement in the Schedule of Prices stating the origin of the goods and services offered and shall be confirmed by a certificate of origin issued at the time of shipment.

IB.14.3 The documentary evidence of the goods' and services' conformity to the Bidding Documents may be in the form of literature, drawings and data, and shall furnish:

- (a) A detailed description of the goods' essential technical and performance characteristics;
- (b) A list giving full particulars, including available sources and current prices, of all spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods for a period of two years, following commencement of the goods used by the Purchaser; and
- (c) A clause-by-clause commentary on the Purchaser's Technical Specifications demonstrating the goods' and services' substantial responsiveness to those specifications or a statement of deviations and exceptions to the provisions of the Technical Specifications.

IB.14.4 For purposes of the commentary to be furnished pursuant to Clause IB.14.3(c) above, the Bidder shall note that standards for workmanship, material and equipment, and references to brand names or catalogue numbers designated by the Purchaser in its Technical Specifications are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, brand names and/or catalogue numbers in its bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions are substantially equivalent or superior to those designated in the Technical Specifications.

IB.15 Period of Validity of Bids

IB.15.1 Bids shall remain valid for ninety (90) days after the date of bid opening prescribed by the Purchaser, pursuant to Clause IB.18. A bid valid for a shorter period may be rejected by the Purchaser as non-responsive.

IB.15.2 In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and responses thereto shall be made in writing (or by courier or telefax). A Bidder granting the request will not be required nor permitted to modify its bid.

IB.16 Format and Signing of Bid

IB.16.1 Only **Electronic submissions** will be accepted, using ShareFile by Citrix. All uploads will be confidential. Upload should be place in the appropriate folder (TECHNICAL OR Commercial). Document should be PDF format.

IB.16.2 The bid shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract. The latter authorization shall be indicated by written power-of-

attorney accompanying the bid. All pages of the bid, except for un-amended printed literature, shall be initialed by the person or persons signing the bid.

IB.16.3 The bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the bid.

Submission of Bids

IB.17 Upload and Labeling of Bids

IB.17.1 **Only Electronic submissions will be accepted, using ShareFile by Citrix. All uploads will be confidential.**

- 1) Respondents must confirm their intention to bid by June 27, 2024, in order to be setup in JPS ShareFile folder.
- 2) Access to individual vendor folders will be given 1 weeks before the bid closes to eliminate any issues for bid upload by RFP deadline.
- 3) Files must be accurately labelled/named. Commercial Information must be a separate file from your Technical Proposal.
- 4) ShareFile Access will be removed when the bid closes.

Additional information on this software can be accessed by clicking the links below:

- Basic Client Guide
<https://citrix.sharefile.com/share/view/s1bff52f8d434781a>
- Training (video) <https://www.sharefile.com/support/training>

IB.18 Deadline for Submission of Bids

IB.18.1 Bids must be received by the Purchaser at the address specified under para. IB.18.1 no later than 11:59 pm Eastern Standard Time on July 5, 2023.

RFP CALENDAR		
ACTIVITY	DUE DATE	RESPONSIBILITY
RFP date	June 14, 2024	JPS
Bidder submits questions on RFP	June 20, 2024	Bidder
Final date to respond to all queries	June 25, 2024	JPS

Bidders provide their intention to bid	June 27, 2024	Bidder
Completion of RFP and deadline for submission of bids to JPS	July 5, 2024	Bidder
Bid Opening	July 8, 2024	JPS

IB.18.2 The Purchaser may, at its discretion, extend this deadline for the submission of bids by amending the Bidding Documents in accordance with Clause IB.07, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

IB.19 Late Bids

IB.19.1 Any bid received by the Purchaser after the deadline for submission of bids prescribed by the Purchaser, pursuant to Clause IB.18, will be rejected.

IB.20 Modification and Withdrawal of Bids

IB.20.1 The Bidder may modify or withdraw its bid after the bid's submission, provided that written notice of the modification or withdrawal is received by the Purchaser prior to the deadline prescribed for submission of bids.

IB.20.2 The Bidder's modification or withdrawal notice shall be prepared and dispatched in accordance with the provisions of Clause IB.17. with additionally marked **Modification** or **Withdrawal** as appropriate. A withdrawal notice may also be sent by telefax or courier but followed by a signed confirmation copy, post marked not later than the deadline for submission of bids.

IB.20.3 No bid may be modified subsequent to the deadline for submission of bids.

Bid Opening and Evaluation

IB.21 Opening of Bids by Purchaser

The Purchaser will open bids privately.

IB.22 Clarification of Bids

IB.22.1 To assist in the examination, evaluation and comparison of bids the Purchaser may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing and no change in the price or substance of the bid shall be sought, offered or permitted, except as required to confirm the correction of arithmetical errors.

IB.23 Preliminary Examination

IB.23.1 The Purchaser will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.

IB.23.2 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If the supplier does not accept the correction of errors, its bid shall be rejected. If there is a discrepancy between words and figures, the amount in words shall prevail.

IB.23.3 Prior to the detailed evaluation, pursuant to Clause IB.25, the Purchaser will determine the substantial responsiveness of each bid to the Bidding Documents. For purposes of these Clauses, a substantially responsive bid is one which conforms to all the terms and conditions of the Bidding Documents without material deviations or reservations. A material deviation or reservation is one which affects in any substantial way the scope, quality or performance of the contractual obligations or which limits in any substantial way or is inconsistent with the bidding documents and the rectification of which deviation or reservation would affect unfairly the competitive position of other bidders presenting substantially responsive bids. The Purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.

IB.23.4 A bid determined as not substantially responsive will be rejected by the Purchaser and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

IB.23.5 The Purchaser may waive any minor informality or non-conformity or irregularity in a bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.

IB.24 Conversion to Single Currency

IB.24.1 To facilitate evaluation and comparison, the Purchaser will convert all bid prices expressed in the amounts in the various currencies in which bid price is payable, to the United States Dollar currency equivalent and at the selling exchange rate published by an official source and applicable to similar transactions on the day bids are opened or at such later date (30 or 60 days after bid opening) as shall be specified in the call for bids.

IB.25 Evaluation and Comparison of Bids

IB.25.1 The Purchaser will evaluate and compare the bids previously determined to be substantially responsive, pursuant to Clause IB.23.

IB.25.2 The Purchaser will evaluate proposals using an internal scoring method that weighs various parameters to give the evaluation team insight into the strengths of each proposal relative to JPS needs. JPS internal scoring method values the following proposal attributes (Order of presentation here does not reflect priority)

Technical

CRITERIA	SCORE
Compliance to JPS specification	Pass/Fail
Compliance to International Standards	Pass/Fail

Commercial.

CRITERIA	SCORE (%)
Price	90
Terms of payment	5
Delivery / Lead Time	5
Total	100

IB.25.3 The Purchaser's evaluation of a bid will exclude and not take into account:

- (a) in the case of goods manufactured in the Purchaser's country or goods of foreign origin already located in the Purchaser's country, sales and other similar taxes, which will be payable on the goods if a contract is awarded to the Bidder; and

- (b) in the case of goods of foreign origin offered from abroad, customs duties and other similar import taxes which will be payable on the goods if the Contract is awarded to the Bidder.

IB.25.4 The comparison shall be of ex-factory/ex-warehouse/off-the-shelf price of the goods offered from within the Purchaser's country, such price to include all costs as well as duties and taxes paid or payable on components and raw material incorporated in the goods, and the CIF port-of-entry price of the goods offered from outside the Purchaser's country.

IB.25.5 The Purchaser's evaluation of a bid will take into account, in addition to the bid price and the price of incidental services, the following factors, in the manner and to the extent indicated in para. IB.25.4 and in the Technical Specifications:

- (a) **Delivery schedule offered in the bid;**

IB.25.6 Pursuant to para. IB.25.5 the following evaluation methods will be followed:

- (a) *Delivery Schedule:*

The purchaser shall receive the goods covered under the invitation, at the time specified in the Schedule of Deliveries. The estimated time of arrival of the goods should be calculated for each bid after allowing for reasonable ocean transportation time. Treating the bid offering the scheduled time of arrival as the base, a delivery "adjustment" will be calculated for other bids at 5% of the CIF price for each month of delay beyond the base and this will be added to the bid price for evaluation.

IB.26 Margin of Preference
Kindly Ignore – this section was intentionally omitted

IB.27 Contacting the Purchaser

IB.27.1 Subject to Clause IB.22, no Bidder shall contact the Purchaser on any matter relating to its bid, from the time of the bid opening to the time the Contract is awarded.

IB.27.2 Any effort by a Bidder to influence the Purchaser in the Purchaser's bid evaluation, bid comparison or contract award decisions shall result in the rejection of the Bidder's bid.

Award of Contract

IB.28 Post-qualification

- IB.28.1 In the absence of pre-qualification, the Purchaser will determine to its satisfaction whether the Bidder selected as having submitted the lowest evaluated responsive bid is qualified to satisfactorily perform the Contract.
- IB.28.2 The determination will take into account the Bidder's financial, technical and production capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to Clause IB.13, as well as such other information as the Purchaser deems necessary and appropriate.
- IB.28.3 An affirmative determination will be a prerequisite for award of the Contract to the Bidder. A negative determination will result in rejection of the Bidder's bid, in which event; the Purchaser will proceed to the next lowest evaluated bid to make a similar determination of that Bidder's capabilities to perform satisfactorily.

IB.29 Award Criteria

- IB.29.1 Subject to Clause IB.31, the Purchaser will award the Contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined as the lowest evaluated bid, provided it has been determined that the Bidder is qualified to perform the Contract services satisfactorily.

IB.30 Purchaser's Right to Vary Quantities at Time of Award

- IB.30.1 The Purchaser reserves the right at any time of award of Contract to increase or decrease by up to 80% the quantity of goods and services specified in the Schedule of Requirements without any change in price or other terms and conditions.

IB.31 Purchaser's Right to Accept Any Bid and to Reject Any or All Bids

- IB.31.1 The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby

incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Purchaser's action.

IB.32 Notification of Award

IB.32.1 Prior to the expiration of the period of bid validity, the Purchaser will notify the successful Bidder in writing by email or by courier or by telefax, to be confirmed in writing by registered letter, that its bid has been accepted.

IB.32.2 The notification of award will constitute the formation of the Contract.

IB.33 Signing of Contract

IB.33.1 At the same time as the Purchaser notifies the successful Bidder that its bid has been accepted, the Purchaser will send the Bidder the Contract Form provided in the Bidding Documents, incorporating all agreements between the parties.

IB.33.2 Within fourteen (14) days of receipt of the Contract Form, the successful Bidder shall sign and date the Contract and return it to the Purchaser.

IB.33.3 Failure of the successful Bidder to comply with the requirement of Clause IB.33 shall constitute sufficient grounds for the annulment of the award, in which event the Purchaser may make the award to the next lowest evaluated bidder or call for new bids.

PART 2
GENERAL CONDITIONS OF CONTRACT

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GC.01

Definitions

In this Contract, the following terms shall be interpreted as indicated:

- (a) "The Contract" means the agreement entered into between the Purchaser and the Supplier, as recorded in the Contract Form signed by the parties, including attachments and appendices thereto and all documents incorporated by reference therein;
- (b) "The Contract Price" means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations;
- (c) "The Goods" means all of the equipment, machinery, and/or other materials which the Supplier is required to supply to the Purchaser under the Contract;
- (d) "Services" means services ancillary to the supply of the Goods, such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance, training and other such obligations of the Supplier covered under the Contract;
- (e) "The Purchaser" means the Organization purchasing the Goods;
- (f) "The Supplier" means the individual or firm supplying the Goods under this Contract;
- (g) IFI means the International Financial Institution and stands for the bank agreed on by both the purchaser and the supplier.
- (h) "Approved" means approved by the Purchaser or its delegated representatives; and
- (i) "Specified" means specified by the Purchaser; either on drawings, in the Technical Specifications, or in writing.
- (j) "Delivery" means delivered CIF Kingston, Jamaica unless otherwise specified.
- (K) "Days" means calendar days acceding to the Gregorian calendar.

GC.02 Application

GC.02.1 These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

GC.03 Country of Origin

GC.03.1 All Goods and Services supplied under the Contract shall be as defined under the guidelines of procurement of the JPS Purchasing Department. These rules are explained under the Special Conditions of Contract.

GC.03.2 For purposes of this Clause "origin" means the place where the Goods were mined, grown or produced, or from which the Services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembling of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.

GC.03.3 The origin of Goods and Services is distinct from the nationality of the Supplier.

GC.04 Standards

GC.04.1 The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standard appropriate to the Goods' country of origin and such standards shall be the latest issued by the concerned institution.

GC.05 Use of Contract Document and Information

GC.05.1 The Supplier shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, of any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

GC.05.2 The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information enumerated in para. GC.05.1 except for purposes of performing the Contract.

GC.05.3 Any document, other than the Contract itself, enumerated in para. GC.05.1 shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the Supplier's performance under the Contract if so required by the Purchaser

GC.06 Patent Rights

GC.06.1 The Supplier shall indemnify the Purchaser against all third party claims of infringement of patent, trademark or industrial design rights arising from the use of the Goods or any part thereof in the Purchaser's country.

GC.07 Inspections and Tests

GC.07.1 The Purchaser or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract. The Special Conditions of Contract and/or the Technical Specifications shall specify what inspections and tests the Purchaser requires and where they are to be conducted. The Purchaser shall notify the Supplier in writing of the identity of any representatives retained for these purposes.

GC.07.2 The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at point of delivery and/or at the Good's final destination. Where conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance - including access to drawings and production data - shall be furnished to the inspectors at no charge to the Purchaser.

GC.07.3 Should any inspected or tested Goods fail to conform to the Specifications, the Purchaser may reject them and the Supplier shall either replace the rejected Goods or make all alterations necessary to meet specification requirements free of cost to the Purchaser.

GC.07.4 The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Good's arrival in the Purchaser's country shall in no way be limited or waived by reason of the Goods having been previously inspected, tested and passed by the Purchaser or its representative prior to the Goods' shipment from the country of origin.

GC.07.5 Risk in the Goods passes to the Purchasers after the Goods arrival in the Purchaser's Country and the Purchaser has inspected, tested and accepted the goods.

GC.07.6 Nothing in Clause GC.07 shall in any way release the Supplier from any warranty or other obligations under this Contract.

GC.08 Packing

GC.08.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points of transit.

GC.08.2 The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract and, subject to Clause GC.17, in any subsequent instructions ordered by the Purchaser.

GC.09 Delivery and Documents

GC.09.1 Delivery of the Goods shall be made by the Supplier in accordance with the terms specified by the Purchaser in its Schedule of Deliveries and the Special Conditions of Contract. Delivery of the Goods takes place after the goods have been tested, inspected and accepted by the Purchaser upon arrival of the Goods in the Purchaser's Country.

GC.09.2 Subject to SC-7 For the purposes of this Contract, **FOB,CFR, CIF** and other trade terms used to describe the obligations of the parties shall have meanings assigned to them by the current edition of the International Rules for the Interpretation of the Trade Terms published by the International Chamber of Commerce, Paris, and commonly referred to as INCOTERMS.

GC.10 Insurance

GC.10.1 The Goods supplied under the Contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in the Special Conditions of Contract.

GC.10.2 Where delivery of the goods is required by the Purchaser on a CIF basis, the Supplier shall arrange and pay for marine insurance, naming the Purchaser as the beneficiary. Where delivery is on an FOB or CFR basis, marine insurance shall be the responsibility of the Purchaser.

GC.11 Transportation

GC.11.1 Where the Supplier is required under the Contract to deliver the Goods FOB, transport of the Goods, up to and including the point of putting the Goods on board the vessel at the specified port of loading, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.

GC.11.2 Where the Supplier is required under the Contract to deliver the Goods **CFR or CIF, Kingston, Jamaica** or to a specified destination within the country, transport of the Goods to the port of discharge or such other point in the country of destination as shall be specified in the Contract shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.

GC.11.3 Where the Supplier is required to effect delivery under any other terms, for example, by post or to another address in the same source country, the Supplier shall be required to meet all transport and storage expenses until delivery.

GC.11.4 In all of the above cases, transportation of the Goods after delivery shall be the responsibility of the Purchaser.

GC.11.5 Where the Supplier is required under the contract to deliver the Goods CIF, shipment shall be made in a carrier operating under the flag of the purchaser's country. Where the Supplier is required in the Contract (i) to deliver the Goods FOB, and (ii) to arrange on behalf and at the expense of the Purchaser for ocean transportation on specified conference vessels or on national flag carriers of the Purchaser's country, the Supplier may arrange for such transportation on alternative carriers if the specified conference vessels or national flag carriers are not available to transport the Goods within the time period(s) specified in the Contract.

GC.12 Incidental Services

GC.12.1 As specified in the Special Conditions of contract, the Supplier may be required to provide any or all of the following services:

- (a) Performance or supervision of on-site assembly and/or start up of the supplied Goods;
- (b) Furnishing of tools required for assembly and/or maintenance of the supplied Goods;
- (c) Furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;
- (d) Performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and
- (e) Conduct of training of the Purchaser's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance and/or repair of the supplied Goods.

GC.12.2 Prices charged by the Supplier for the preceding incidental services, shall not be included in, shall be quoted separately in the Contract Price for the Goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged by other parties by the Supplier for similar services.

GC.13 Spare Parts

GC.13.1 As specified in the Special Conditions of Contract, the Supplier may be required to provide any or all of the following materials and notifications pertaining to spare parts manufactured or distributed by the Supplier:

- (a) Such spare parts as the Purchaser may elect to purchase from the Supplier, provided that this election shall not relieve the Supplier of any warranty obligations under the Contract; and
- (b) In the event of termination of production of the spare parts:
 - advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirement; and
 - following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if and when requested.

GC.14 Warranty

- GC.14.1 The Supplier warrants that the goods supplied under the Contract are new, unused, of the most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier further warrants that the Goods supplied under this Contract shall have no defect arising from design, materials or workmanship (except insofar as the design or material is required by the Purchaser's Specifications) or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in the conditions obtaining in the country of final destination.
- GC.14.2 This warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered (and commissioned) to the final destination indicated in the Contract.
- GC.14.3 The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty.
- GC.14.4 Upon receipt of such notice, the Supplier shall, depending on which of the methods can be achieved more expeditiously with reasonable speed, repair or replace the defective Goods or parts thereof, without costs to the Purchaser and under the terms and conditions as if the replacement Goods or parts were being delivered to the Company for the first time.
- GC.14.5 If the Supplier, having been notified, fails to remedy the defect(s) within a reasonable period, the Purchaser may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

GC.15 Payment

- GC.15.1 The method and conditions of payment to be made to the Supplier under the Contract shall be as specified in the Special Conditions of Contract.
- GC.15.2 The Supplier's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and Services performed, and by shipping documents, submitted pursuant to Clause GC.09, and upon fulfillment of other obligations stipulated in the contract.
- GC.15.3 Payments shall be made promptly by the Purchaser within sixty (60) days of submission of an invoice-/claim by the Supplier.

GC.15.4 The currency or currencies in which payment is made to the Supplier under this Contract shall be as specified in the Special Conditions of Contract subject to the following general principle: Payment will be made in the currency or currencies in which the Contract Price has been stated in the Supplier's bid, as well as in other currencies in which the Supplier had indicated in its bid that it intends to incur expenditures in the performance of the Contract and wishes to be paid.

GC.16 Prices

GC.16.1 Prices charged by the Supplier for Goods delivered and Services performed under the Contract shall not, with the exception of any price adjustments authorized by the Special Conditions of Contract, vary from the prices quoted by the Supplier in its bid.

GC.17 Change Orders

GC.17.1 The Purchaser may at any time, by a written order given to the Supplier pursuant to Clause GC.30, make changes within the general scope of the Contract in any one or more of the following:

- (a) drawings, designs or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
- (b) the method of shipment or packing;
- (c) the place of delivery; or
- (d) the Services to be provided by the Supplier.

GC.17.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any part of the work under the Contract, whether changed or not changed by the order, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall be amended accordingly. Any claims by the Supplier for adjustment under this clause must be asserted within thirty (30) days from the date of the Supplier's receipt of the Purchaser's change order.

GC.18 Contract Amendments

GC.18.1 Subject to Clause GC.17, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the duly authorized agents of both parties.

GC.19 Assignment

GC.19.1 The Supplier shall not assign, in whole or part, its obligations to perform under the Contract, except with the Purchaser's prior written consent.

GC.20 Subcontracts

GC.20.1 The supplier shall notify the purchaser in writing of all subcontracts awarded under the Contract if not already specified in his bid. Such notification, in his original bid or later, shall not relieve the supplier from any liability or obligation under the Contract with the Purchaser.

GC.20.2 Contracts with Subcontractors must comply with the provisions of Clause GC.03, GC.05, GC.08 and GC.14.

GC.21 Delays in the Supplier's Performance

GC.21.1 Delivery of the Goods and performance of Services shall be made by the Supplier in accordance with the time schedule specified by the Purchaser in its Schedule of Deliveries.

GC.21.2 A delay by the Supplier in the performance of its delivery obligations shall, subject to the provisions of clause GC.24, render the Supplier liable to any or all of the following sanctions: imposition of liquidated damages, and/or termination of the Contract for default, unless the reason for such delay is acceptable to the Purchaser.

GC.21.3 If at any time during the performance of the Contract, the Supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract, or terminate the Contract in accordance with the provision of clause GC.21.2.

GC.22 Liquidated Damages

GC.22.1 Subject to Clause GC.24, if the Supplier fails to deliver any or all of the Goods or perform the Services within the time period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to two point five percent (2.5%) of the delivered price of the delayed Goods or unperformed Services for each week of delay until actual delivery or performance, up to a maximum deduction of fifteen percent (15%) of the delayed Goods or Services contract price. Once the maximum is reached, the Purchaser may consider termination of the Contract.

GC.23 Termination for Default

GC.23.1 The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or in part:

- (a) if the Supplier fails to deliver any or all of the Goods within the time period(s) specified in the Contract, or any extension thereof granted by the Purchaser pursuant to Clause GC.21; or
- (b) if the supplier fails to perform any other obligation(s) under the Contract.

GC.23.2 In the event the Purchaser terminates the Contract in whole or in part, pursuant to para. GC.23.1, the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods. However, the Supplier shall continue performance of the Contract to the extent not terminated.

GC.24 Force Majeure

GC.24.1 Notwithstanding the provisions of Clauses GC.21, 22, 23, the Supplier shall not be liable for liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

GC.24.2 For the purposes of this clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

GC.24.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

GC.25 Termination for Insolvency

GC.25.1 The Purchaser may at any time terminate the Contract by giving written notice to the Supplier, without compensation to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent, provided that

such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Purchaser.

GC.26 Termination for Convenience

GC.26.1 The Purchaser, may by written notice sent to the Supplier, terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective.

GC.26.2 The Goods that are complete and ready for shipment within 30 days after the Supplier's receipt of notice of termination shall be purchased by the Purchaser at the Contract terms and prices. For the remaining goods, the Purchaser 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 for materials and parts previously procured by the Supplier.

GC.27 Resolution of Disputes

GC.27.1 The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

GC.27.2 If, after thirty (30) days from the commencement of such informal negotiation, the Purchaser and the Supplier have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms specified in the Special Conditions of Contract. The mechanism shall be specified in the Special Conditions of Contract.

GC.28 Governing Language

GC.28.1 The Contract shall be written in the language of the bid, as specified by the Purchaser in the Instructions to Bidders. Subject to Clause GC.29, that language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in that same language.

GC.29 Applicable Law

GC.29.1 The Contract shall be interpreted in accordance with the laws of the Purchaser's country.

GC.30 Notices

GC.30.1 Any notice given by one party to the other pursuant to the Contract shall be sent in writing or by courier or telefax and confirmed in writing to the address specified for that purpose in the Special Conditions of Contract.

GC.30.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

GC.31 Taxes and Duties

GC.31.1 A foreign Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the Purchaser's country.

GC.31.2 A local Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser.

PART 3

SPECIAL CONDITIONS OF CONTRACT

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SC General

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. The corresponding clause number of the General Conditions is indicated in parentheses.

SC.01 Definitions (Clause GC.01)

- (a) The Purchaser is The Jamaica Public Service Company Limited (JPS)
- (b) The Supplier is the successful Bidder
- (c) The Bank is the Bank agreed on by the purchaser and the supplier.
- (d) Delivery is delivered **on a Flat Rack CIF Kingston, Jamaica, W.I.** PROVIDED THAT risk in the Goods arrival in the Purchasers' Country and the Purchaser has inspected, tested and accepted the Goods.

SC.02 Country of Origin (Clause GC.03)

All member countries as per JPS Purchasing Department pre-qualification list.

SC.03 Inspection and Tests (Clause GC.07)

The required inspection and tests are specified in the Technical Specifications.

SC.04 Delivery and Documents (Clause GC.09)

- (a) For Imported Goods

Prior to shipment, the Supplier shall notify the Purchaser and its Insurance Company by email or telefax 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, date of arrival at port of discharge or other information which may be relevant to the purchaser or insurance company. The Supplier shall mail the documents listed in clause 3 of the Purchaser's Purchase Order in accordance with the terms and conditions therein.

- (i) Original and two (2) copies of the Supplier's invoice showing Goods description, quantity, unit price, total amount;

- (ii) First and Second Original of negotiable, clean, on-board bill of lading marked freight prepaid and one (1) copy of non-negotiable bill of lading;
- (iii) Original and two (2) copies of the packing list identifying contents of each package;
- (iv) Original and two (2) copies of the Insurance certificate;
- (v) Original and two (2) copies of the Manufacturer's/supplier's warranty certificate;
- (vi) Inspection certificate, issued by the nominated inspection agency and the Supplier's factory inspection report; and

The above documents shall be received by the Purchaser at least one week before arrival of Goods at the port and, if not received, the Supplier will be responsible for any consequent expenses.

Customs Regulations Governing Import of Chemical, Liquids, Solvents and Gases:

All goods falling in the above category deemed hazardous or non hazardous require an import permit. The Supplier is expected to submit the following documents, minimum fifteen (15) working days prior to shipment.

- (a) Material Safety Data Sheet (MSDS)
- (b) Packing list indicating the description of the item, packing type and quantity.

No shipment should be effected for the above categories of goods without notification that a permit is in place.

SC.05 Insurance (Clause GC.10)

Notwithstanding GC 09.2, the marine insurance shall be in an amount equal to 110% of the CIF value of the goods from "warehouse to warehouse" on "All Risks" basis including War Risks and Strike clauses. Warehouse to warehouse shall mean from the warehouse of the supplier to the warehouse of the Purchaser.

SC.06 Incidental Services (Clause GC.12)

All required incidental services have been included in the Technical Specifications. The cost shall be included in the Contract price.

SC.07 Spare Parts (Clause GC.13)

Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares such as gaskets, washers, etc. Other spare parts and components shall be supplied as promptly as possible but in any case within six months of placement of order and establishment of Letter of Credit.

SC.08 Warranty (Clause GC.14)

In partial modification of the provisions, the warranty period shall be twelve (12) months from the date of commissioning.

SC.09 Payment (Clause GC.15)

- (a) Payment for Goods.

On Receipt of Goods: 100% of the Contract Price of the Goods received shall be paid within 60 days of receipt of Goods on submission of claim supported by Acceptance Certificate issued by the Purchaser's representative.

SC.10 Resolution of Disputes (Clause GC.27)

The dispute resolution mechanism to be applied pursuant to Clause GC.27 of the General Conditions shall be as follows:

- (a) In the case of a dispute between the Purchaser and a Supplier which is a national of the Purchaser's country, the dispute shall be referred to adjudication/arbitration in accordance with the laws of the Purchaser's country; and
- (b) In the case of a dispute between the Purchaser and a foreign Supplier, the dispute shall be settled by arbitration in accordance with the provisions of the UNCITRAL Arbitration Rules.
- (c) The Appointing Authority shall be the President for the time being of the Jamaica Institute of Engineers (J.I.E.).
- (d) There shall be one Arbitrator.

SC.11 Notices (Clause GC.30)

For the purpose of all notices, the following shall be the address of the Purchaser and the Supplier.

Purchaser:

**Purchasing Manager
Jamaica Public Service Co. Ltd.
P.O. Box 54
Kingston, Jamaica.**

Supplier:

PART 4

EXHIBITS

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Exhibit 1

FORM OF AGREEMENT

This Agreement made the _____ day of _____, 20____ for the supply of Steel Structure and Busworks for the Bellevue Substation **RFP #987999**.

BY AND BETWEEN

JAMAICA PUBLIC SERVICE COMPANY LIMITED, a company incorporated under the laws of Jamaica with Head Office at No. 6 Knutsford Boulevard in the Parish of St. Andrew, Jamaica; hereinafter called the "Purchaser".

AND

with registered office at _____ hereinafter called the "Supplier".

WITNESSETH that the Purchaser and the Supplier agree as follows:

1. The following documents shall be deemed to form and be read and construed as part of this Agreement, which shall constitute a binding Contract between the Purchaser and the Supplier:

- (a) The Addenda (if any)
- (b) The letter of award/acceptance
- (c) The Technical Specifications
- (d) Drawings referred to in the Specification
- (e) The Special Conditions of Contract
- (f) The General Conditions of Contract
- (g) The Bidders Proposal
- (h) The Instructions to Bidders

The aforesaid documents shall be taken as complimentary and mutually explanatory of one another but in the case of ambiguities or discrepancies shall take precedence in the order set out above.

2. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier agrees to furnish the materials and equipment complete in every respect in conformity with the provisions of this Contract and to the satisfaction of the Purchaser and the delivery of such materials and equipment shall be made on or before

3. In consideration of the Execution of the Works in accordance with the Provisions of this Contract and to the satisfaction of the Purchaser, the Purchaser agrees to pay the Contract Price to the Supplier at the time and in the manner prescribed herein. The Contract Price shall consist of unit prices and lump sums named in the attached Schedule of Prices having a total (based on estimated quantities in the case of unit price items) of

_____ dollars \$ _____

This Agreement bears the formal date aforementioned and shall be for all purposes retroactive to such date even though signed and acknowledged on the dates mentioned below.

The Supplier and the Purchaser for themselves, their successors, and assigns hereby agree to the full performance of the covenants herein contained in witness whereof they have executed this Agreement as of the day and year first written above.

SIGNED SEALED AND DELIVERED)
by the said SUPPLIER in the)
presence of)

WITNESS

SIGNED SEALED AND DELIVERED)
by the said PURCHASER in)
the presence of)

WITNESS

PART 5
BID FORM

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Bid for
THE JAMAICA PUBLIC SERVICE COMPANY LIMITED

**NORTH COAST INTERBUS TRANSFORMERS
UPGRADE & RATIONALIZATION PROJECT
FOR THE SUPPLY OF**

**STEEL STRUCTURES AND BUSWORK FOR INSTALLATION AT BELLEVUE
SUBSTATION**

RFP # 987999

Proposed by _____

of _____

a Company duly incorporated under the laws of _____

and licensed to carry on business in the Country of _____

and having its head office at _____

hereinafter called the Bidder.

**TO: THE JAMAICA PUBLIC SERVICE CO. LTD.
6 KNUTSFORD BOULEVARD
P. O. BOX 54
KINGSTON 5, JAMAICA W.I.**

Having examined the Bid Documents including Instructions to Bidders, General Conditions of Contract, Special Conditions of Contract, Exhibits, Technical Specification and Attachments to the above named documents the undersigned Bidder hereby proposes and offers to supply Steel Structure and Buswork in conformity with the Specification for and at the prices set out in the annexed Schedule of Prices and by the date specified in the Schedule of Requirements.

The total amount of this Bid calculated according to the said Schedule of Prices is

United States Dollars (US\$ _____). The Bidder undertakes to enter into a Contract incorporating Bid Documents and this Bid and the Bidder hereby agrees that until such a Contract is executed, the said documents and the Notification of Acceptance of Bid by the Purchaser to the successful Bidder shall constitute a binding Contract.

The Bidder agrees that his Bid shall continue open to acceptance and irrevocable until the formal Contract is executed by the successful Bidder for the said work and the Purchaser may at any time within ninety (90) days of the closing date for Bids, accept this Bid without notice, whether any other Bid has previously been accepted or not.

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TS.01 SUMMARY OF WORK

TS.01.1 Scope of Works

JPS proposes to install a 60/80MVA, 138kV/ 69kV interbus transformer at Bellevue Substation in the parish of St. Ann. The existing 138kV bus will be expanded via a low-profile design that uses 3" aluminum pipe conductors. It will see the addition of two (2) 138kV circuit breakers, four (4) 138kV switches and three (3) 138kV potential transformers (PTs). Two (2) 69kV circuit breakers and four (4) 69kV PTs will be added to the existing 69kV bay.

The Works under this Contract for the Bellevue 138kV/ 69kV Interbus Transformer Project include all design, manufacture and delivery of steel structures and bus-work, specified herein.

The Supplier shall execute all works, whether itemized in these Documents or not, necessary for the timely and successful implementation of the Contract.

Part of work is the responsibility of the Purchaser as described in Section TS.01.2 below.

Materials

- Four (4) 138kV low switch stands
- One (1) 138kV high switch Stand
- One (1) 69kV switch stand
- Twelve (12) 138kV low bus support stands
- Three (3) 138kV high bus support stands
- Three (3) 138kV single PT stands
- Three (3) 69kV single PT stands
- Anchor bolts with nuts and flat washers
- One lot bus materials
- One lot miscellaneous materials – stainless steel bolts, flat washers, lock washers for installation of bus connectors, etc.

Electrical and Mechanical Designs

- Bellevue Substation Layout Plan showing connections to the existing 138kV and 69kV Buses.
- Bellevue Substation Layout Plan and Section drawings showing details and BOM for bus materials.
- Steel structure drawings and calculations.

Miscellaneous

- All components and accessories required for the completion and satisfactory operation of the new 138kV/ 69kV interbus transformer, except for equipment/material described in Clause TS.01.2, shall be supplied.
- Manuals and instructions requested in TS.02.3 are to be provided by the Supplier.

TS.01.2 Work to be Carried out and Supplied by Others

Part of the work is to be carried out under the Purchaser's responsibility and shall include the following:

- Clearance of materials and equipment through Customs and transportation to site
- Supply of equipment – interbus transformer, circuit breakers, disconnect switches, potential transformers, cables, etc.
- Design equipment foundations
- Construction of Civil Works
- Installation and pre-commissioning of substation Works
- Testing and commissioning of substation Works

TS.01.3 Site Location

The Substation Site is located at Bellevue in the parish of St. Ann, Jamaica.

The Island of Jamaica is located at approximately 18° 15' N, 77° 30' W.

The Port of Kingston is used by ocean-going vessels and is well-equipped regarding quay and warehouse and container handling facilities.

TS.01.4 Specification Drawings

The drawings, which accompany and form part of these specifications, are:

- 5918-91-BE8D Rev.3: Bellevue 138kV Substation PT, High and Low Bus Stand
 - 138kV Low Bus Stand: #BES4
 - 138kV High Bus Stand: #BES5
 - 138kV PT Stand: #BES1
- 598-91-BE9D Rev.3: Bellevue 138kV Substation Low Switch Stand
- 598-91-BE9D-HSS: Bellevue 138kV Substation High Switch Stand
- 29207 Sheet 1: Bellevue Interbus Installation Foundation Layout
- 29207 Sheet 2: Bellevue Interbus Installation Electrical Plan
- 29207 Sheet 3: Bellevue Interbus Installation Elevation and Section – A
- 29207 Sheet 4: Bellevue Interbus Installation Elevation and Section – B
- 29207 Sheet 5: Bellevue Interbus Installation Elevation and Section – C
- 29207 Sheet 6: Bellevue Interbus Installation Elevation and Section – D
- 29207 Sheet 7: Bellevue Interbus Installation Bus Work Bill of Materials

Equipment outline-drawings (138kV Disconnect Switches, 69kV Disconnect Switches, 138kV PTs, 69kV PTs).

The Supplier may propose designs and arrangements that best suit the equipment proposed for consideration by the Purchaser, and which best facilitate access for maintenance within the confines of the available space.

The following information shall be provided to the successful bidder:

1. Existing Bellevue 138kV Layout and Section drawings

TS.02 GENERAL REQUIREMENTS

TS.02.1 Approval by the Purchaser/Engineer

In the Specifications the word “Purchaser” is generally used where approval of design, equipment and material is mentioned. The word “Engineer” is generally used where approval of work is mentioned.

TS.02.2 Work Program

The Supplier shall submit with his Tender a Work Programme in the form of a Gantt chart. The Work Program shall indicate the order in which the Supplier proposes to carry out the work and the time schedule he guarantees to follow for design, manufacture, factory test, shipment, etc.

The Supplier shall submit within 5 working days of acceptance of the bid a general Work Schedule showing key days required for sub-orders and drawing approvals so that the specified delivery date may be met.

The schedule shall indicate commencement and completion dates for the principal features of the Works including, but not limited to, engineering design, submittal of drawings for approval, time allowed for approval, manufacture, testing, and shipping.

TS.02.3 Documentation

TS.02.3.1 Information to be Submitted by the Supplier

The Supplier shall submit to the Purchaser, drawings, design data, operation, and maintenance manuals, as may be called for herein, or as the Purchaser may reasonably require. The Supplier’s drawings and design data shall bear the Supplier’s official verification that the information shown thereon has been checked by the Supplier and is correct for use in construction, except for drawings of a preliminary nature furnished for information only, which shall be clearly identified as such.

Where applicable, the following drawings and information are to be submitted for approval before manufacture commences.

- Arrangement and assembly drawings
- Mounting details
- Dimensioned outline drawings, details, and weights of all materials and equipment
- Catalogue Cuts

TS.02.3.2 Submission and Approval of Drawings

During the design period, the Purchaser shall submit full documentation for review and approval.

The Supplier shall prepare and submit to the Purchaser in three sets the following within the time specified in the agreed Work Schedule:

Design and construction drawing
Apparatus list

Information or instructions relating to the drawings.

Information may be provided by email.

Apparatus lists submitted shall include all apparatuses in the Plant. The lists shall indicate apparatus numbers, technical data, and references to relevant drawings.

All drawings and data, together with such additional detailed drawings as are required or specifically requested to fully demonstrate that all parts of the equipment to be furnished will conform to the provisions and intent of this specification. Any drawing of a preliminary nature must be so indicated.

All drawings or documents submitted to the Purchaser should bear the Supplier's stamp "For Approval", the date of submission and the Supplier's signature.

Every revision shall be shown by number, date, and subject in a revision block. Drawings will be reviewed only for general design, overall dimensions, and materials.

The Purchaser will either approve these documents or request changes or modifications to be made and shall return one (1) copy to the Supplier within three weeks after receipt of the drawings. The copy of each document returned to the Supplier by the Engineer shall be dated, signed, and marked either "REVIEWED" or "REVISE AND RESUBMIT". The time required for the approval, revision and possible resubmission of the drawings must be allowed for in the overall schedule.

Approval by the Purchaser of the Supplier's drawings shall not relieve the Supplier of his responsibility for the correctness of his drawings and for conformity to the specification, correct details and fit of parts when erected.

The Supplier shall submit for final approval, revised copies within five (5) working days of the receipt of the marked-up drawings. Any manufacturing done before approval of the drawings will be at the Supplier's own risk. The Purchaser will have the right to require the Supplier to make any changes in design, which are necessary, in the opinion of the Purchaser, to make the equipment conform to the requirements and intent of the Specifications without additional cost.

Drawings which have been reviewed except "as noted" will not have to be resubmitted for review unless so indicated. No major revision affecting the design shall be made after a drawing has been approved, without resubmitting the drawing for review.

All applicable requirements in the preceding paragraphs, with reference to drawings, shall apply to catalog cuts, illustrations, printed specifications, or any other data submitted.

The Bill of Materials shall be treated as a drawing.

After final approval, reproducible record drawings shall be provided. Copies of drawings shall be provided on CDs in "AutoCAD 2013 in addition to the reproducible record drawings.

Drawing and data shall be submitted within the agreed time after the date on which an order or letter of intent is received by the Supplier.

TS.02.3.3 Drawing Format

The sizes of all documents and drawings shall conform to the ISO standard, i.e., sizes A1, A2, A3 and A4. The schematic diagrams shall have a size of A3.

Scales to be used on the drawings shall be 1:10, 1:20, 1:40, 1:50 and multiples of this series. All measurements shall be given in the metric system.

Each Drawing shall have a title block provided at the lower right-hand corner. At least the following information shall be included in the title block:

- Supplier's name
- Purchaser's name (Jamaica Public Service Company Limited)
- Name of Substation (Bellevue 138/69kV Substation)
- Drawing title (brief description of drawing)
- Drawing and revision number
- First date and revision dates
- Scale and scale bar (where applicable).

The graphical symbols on electrical drawings, diagrams, and other documents shall be in accordance with ANSI standards.

Dimensions of Drawing frames with bending margin shall be as follows: -

Drawing Size	Dimension of Drawing Frame (mm)
A1	566 x 801
A2	400 x 566
A3	283 x 394

Units of measure and weights shall be expressed in the metric (SI) system of measurements.

TS.02.3.4 Installation, Operation and Maintenance Manual

General

The Supplier shall deliver Operation and Maintenance Manuals, including all Final Drawings (marked AS BUILT) in four (4) sets. One of the sets to the Purchaser shall be by email.

The documentation included in the general manuals shall be inserted in files with table of content.

The general manuals shall comprise such detailed documentation as will enable the Purchaser to operate, maintain, adjust, and repair all parts of the plant.

The documentation listed below shall be included in the General Manuals.

- a. A general description of the equipment in the Contract.
- b. One (1) copy of each approved drawing including catalogue cuts and other pertinent data.
- c. Installation Details (including instructions mounting and adjustment).
- d. Assembly and/or erection details.
- e. General maintenance instructions.
- f. Test certificates, curves, oscillograms.
- g. All other drawings, manuals, and instructions, which are not mentioned, but are deemed necessary for a safe and proper handling of the materials.

Apparatus Documentation

The following apparatus documentation shall be included:

- a. Test certificates.
- b. Data lists regarded as binding for the manufacturer.

- c. Dimension drawings. Drawings regarded as binding for the manufacturer, showing measures, weights, and features of the apparatus.
- d. By the Purchaser required detail drawings. All approved drawings.
- e. List of components and details on the apparatus. They may preferably be included in the dimension sketch.
- f. Parts identification list for each item furnished
- g. Manufacturer's descriptive information and instructions

Plant Design

The following design documentation shall be included:

- a. All layout, construction, and installation drawings
- b. Steel structure calculations including results for foundation designs
- c. Buswork calculations
- d. Lightning Protection calculations
- e. Apparatus lists including all apparatuses installed, subdivided in bays and panels. Lists shall include technical data, order number and references to schematic diagrams.
- f. Connection diagrams or tables indicating all internal and external connections in panels and cubicles, with references to cable numbers.
- g. Circuit and schematic diagrams covering the complete plant in a surveyable way. The diagrams shall contain apparatus numbers, terminal block numbers and all contact numbers.

Preliminary copies of the operating and maintenance manuals shall be submitted for approval in sufficient time to allow for issue prior to shipping the equipment.

TS.02.4 Standards**TS.02.4.1 General**

All materials used, and equipment supplied and all workmanship, shall conform to the latest editions of all relevant ANSI standards or to relevant IEC standards. Where equipment, components or materials are not covered by appropriate ANSI standards, relevant IEEE, NEMA, ASTM, AISC and AWS shall apply. If materials conforming to other recognized national standard is offered, the bidder shall provide a copy of the standard offered and shall itemize the pertinent areas where the standard differs from the requirements of the relevant ANSI standard.

If this Specification conflicts in any way with any of the above standards or codes, this Specification shall have precedence and shall govern. However, the Bidder shall point out the conflicts in its Bid.

In all cases the Supplier must inform the Purchaser well in advance of precisely which Standards the materials, equipment or workmanship will conform to. For any such Standards, which are not written in the English language, the Supplier shall make available copies of the English translation.

The Supplier shall control the quality of all fabricated and manufactured items of plant and equipment; and services supplied to meet the requirements of these documents, including those prescribed by the following applicable Codes and Standards.

Electrical work quality standards for the equipment and materials to be supplied are included in these Technical Specifications. The Commercial Requirements set out elsewhere in the Tender Document also refer to the quality standards. All these quality standards shall be considered a part of the requirements for the works.

The codes and standards included in these Specifications set minimum standards, which must be equaled or exceeded by the Supplier. The Supplier may exceed the minimum standards if the higher standard result in a superior or more economical design for the successful and continuous operation of the plant and equipment required for this works.

The foregoing referenced standards and their abbreviations are as follows: -

<u>Name</u>	<u>Abbreviations</u>
American Institute of Steel Construction	AISC
American National Standards, Inc.	ANSI
American Society of Civil Engineers	ASCE
American Society of Mechanical Engineers	ASME
American Society for Testing and Materials	ASTM
American Welding Society	AWS
National Electrical Manufacturers Ass.	NEMA
British Standards Institute	BS
Institute of Electrical and Electronics Engineers, Inc.	IEEE
Canadian Standard Association	CSA
International Electrotechnical commission	IEC
International Organisation of Standardization	ISO

TS.02.4.2 Relevant Codes and Standards:

The design, manufacture, construction and testing of all plant, equipment, building, and civil works furnished under this Contract shall be in accordance with all applicable codes and standards. The latest edition, revision, or supplement of the standards in effect at the date of Notice to Commence shall be used.

AISC,	American Institute of Steel Construction
ANSI,	American National Standards Institute
ASME,	American Society of Mechanical Engineers
ASTM,	American Society of Testing and Materials
AWS,	American Welding Society
EI,	Edison Electrical Institute
IEC,	International Electrotechnical Commission
IEEE,	Institute of Electrical Electronic Engineers
IPCEA,	Insulated Power Cable Engineers' Association
ISA,	Instrument Society of America
MSHA,	U.S. Department of Labor
MSS,	Manufacturers Standardization Society of the Valves and Fittings Industry
NACE,	National Association of Corrosion Engineers
NEC,	National Electric Code
NEMA,	National Electrical Manufacturer's Association
NFPA,	National Fire Protection Association, specifically National Electric Code (NFPA 70-2008) and Life Safety Code (NFPA101).
OSHA,	Occupational Safety and Health Administration State, City, and Local Codes and Practices
SSPC,	Steel Structures Painting Council
UBC,	Uniform Building Code
UL,	Underwriters Laboratories

TS.02.5 General Quality Requirements

TS.02.5.1 Plant and Materials

1. Comply with Technical Requirements and referenced standards as minimum requirements.
2. Furnish interchangeable equipment of the same manufacturer, for similar applications.
3. Plant and Materials incorporated into the Project will be new, state-of-the-art, and unused, and free from defects in design, materials, or assembly.
4. The completed installation will operate in a manner consistent with the standards generally accepted in the utility industry.

TS.02.5.2 Manufacturers' Instructions

Execute in accordance with details of instructions and specified requirements. Should a conflict exist between Technical Requirements and instructions, consult with Purchaser's Representative.

TS.02.6 Materials and Equipment

All materials shall be of first-class quality and shall comply in all respects with these Specifications.

All material shall be inspected and tested in full to prove compliance with the requirements of the Specifications to the satisfaction of the Engineer. The testing shall be carried out according to the relevant Standard approved by the Purchaser.

All equipment supplied and material used shall be suitable for the climate and other conditions at the Site. The Plant shall be of tropical design for an ambient temperature of maximum 40° C. Further information regarding environmental conditions is given in TS.02.9 of these Specifications.

Where applicable, the equipment shall be vermin-proof. Netting used in this respect shall have at least one (1) mesh per mm².

TS.02.7 System Characteristics

(i)	System Voltage		
	Phase to phase voltage	69kV	138kV
	Nominal system voltage	69kV	138kV
	Max operating voltage	72.5kV	145kV
(ii)	Number of phases	3	3
(iii)	Frequency	50 Hz	50 Hz
(iv)	System connection	3-Wire	3-wire
(v)	Method of Grounding	Grounding Transformer	Direct
(vi)	Auxiliary power supply	120/240V single phase/240V, 3-phase 125V DC	
(vii)	Fault MVA	3000 MVA	5000 MVA
(viii)	Maximum Conductor temperature	75°C (35°C temp. rise on 40°C Ambient).	

TS.02.8 Auxiliary Electric Equipment

The auxiliary electric equipment shall be designed for the following voltages:

For normal auxiliary equipment and common services
 - 120/240V Single Phase, 240V AC, 3-phase ± 10 %, 50 Hz.

For control, protection, and special auxiliary equipment
 - 125 V DC + 10 % - 10 %, 2-wire insulated system.

TS.02.9 Environmental Conditions

Tropical Climate subject to direct sunlight and saline contamination

- (i) Altitude Less than 1,000 meters above sea level.
- (ii) Ambient Temperatures

Maximum	40°C
Average	30°C
Minimum	15°C
- (iii) Atmospheric conditions Tropical climate subject to direct sunlight, wind, and saline contamination
- (iv) Wind Speed 67m/s (3 second gust)
- (v) Seismic Conditions UBC 1997 [Zone 4](#)
- (vi) Relative Humidity

Maximum -	100%
Average -	50%

The distance of the substation from the sea is approximately 18 km.

TS.02.10 Preparation for Shipment

Packaging

All parts of the Plant and Equipment shall be well packed and protected against loss or damage during the transport by sea and over land and in store. The effects of the tropical hot climate, rainfall and open storage shall be considered. All packing shall be performed in such a way that overturning of the packages will not damage the goods. Instruction for handling shall be clearly marked on all parts, packages, and crates.

Small or fragile pieces shall be carefully boxed or crated or otherwise protected against loss or damage during shipment. Delicate electrical and other parts shall be boxed in weatherproof containers.

The Supplier shall pay for and be entirely responsible for all packing, provision of load distribution beams, etc. as required. Any loss or damage shall be made good to the satisfaction of the Purchaser by the Supplier and, except where otherwise provided, at the Supplier’s own expense

The Supplier shall prepare all equipment and their components in such a manner as to facilitate handling and to adequately protect them from contamination, corrosion or damage in-transit and shall be responsible for and make good any or all damages due to improper preparation or loading.

Detachable items shall be removed for shipment and shall be crated in such a way as to prevent weight from being directly placed on the equipment during transportation.

It shall be the responsibility of the Supplier to take any other precaution required to ensure the arrival of the equipment in an undamaged and satisfactory working condition.

Transport Marking

All packages, crates, etc., shall be adequately marked to facilitate field identification by means of stencilling directly on the packing wood.

The recognition label shall bear the following marks:

- * Goods intended for: Jamaica Public Service Company Limited
- * Name and address of Supplier
- * Crate number
- * Gross weight, net weight, and dimensions of crate
- * Port of disembarkation

Labels shall be sized according to package dimensions.

All crates shall be marked on three nearby sides, and reels on both sides.

To facilitate custom clearance and field identifications, the shipping documents shall include lists itemising the types and quantities of material contained in each crate.

All crates, sacks and bundles shall be clearly marked to facilitate field identification as follows:

Jamaica Public Service Company Limited

Kingston Jamaica

BELLEVUE 138/69KV SUBSTATION PROJECT

Any other relevant identification marks.

All external markings shall be legible and durably printed/stenciled on two sides and both ends (where applicable) of containers in letters at least 50 mm high.

To facilitate field identification, shipping document shall include lists with type and quantities of materials contained in each crate.

Transport

The Supplier shall at his earliest opportunity, inform the Purchaser about each consignment by providing a list of contents, also specifying the shipping date and the expected date of arrival.

Shipping Documents

The following should be adhered to when issuing shipping documents.

- a) The original invoice must be signed and state that prices are CIF.
- b) No lot value should appear on the invoice; each item should have a unit price and total value.
- c) A proper description or generic description with part number or catalogue number is required and not part number or catalogue number only.

d) In the case of NO CHARGE ITEMS state "Value for customs purposes only".

Custom Clearance

All imported goods shall be detailed specified and itemised to facilitate custom clearance.

The Purchaser shall be the Consignee of the imported material and shall clear the goods.

TS.02.11 Tropicalization of Equipment

In the selection of materials and equipment, due regard shall be given to the hot and humid conditions to which they will be subjected. Untreated organic materials, such as cotton, paper, or wood, shall not be used. Marking strips and nameplates shall be of plastic laminate or anodized aluminum. Paper label shall not be used even if protected in a plastic envelope.

TS.02.12 Workmanship and Design

Workmanship

All methods of work and workmanship, whether fully specified herein or not, shall be of the highest order. In all respects, the generally accepted requirements and commonly recognised good practice for first-class work of this nature are to be adhered to. All work shall be to the satisfaction and approval of the Engineer.

Design

All design carried out by the Supplier shall comply with these Specifications. The Supplier shall be entirely responsible for all design carried out by him irrespective of the Purchaser's approval of the drawings and inspections and testing on the Supplier's premises.

All main components of the equipment/material shall be provided with suitable eyebolts to facilitate erection and overhauling.

TS.02.13 Manufacture

Before commencing any manufacture of the Plant, the Supplier shall submit for the approval of the Purchaser, the names of the manufacturers from whom it proposes to order any parts of the Plant, and the names of any Sub-Contractors from whom he proposes to order any parts of the Plant. After such approval has been given the manufacture shall be planned and performed according to the Specifications and to the satisfaction of the Engineer.

TS.02.14 Inspection and Testing

General

All apparatus shall be type and routine tested in accordance with relevant ANSI Standards or equivalent standards acceptable to the Purchaser.

The Engineer shall be entitled to inspect and attend tests of all plant during manufacture at the Manufacturer's premises. Before every such inspection and test the Supplier shall satisfy himself that the work is in all respects in accordance with the Specification and ready for inspection and testing.

Satisfactory completion of such inspection and testing shall not prejudice the right of the Engineer to reject the equipment if it fails to comply with the Specifications or fulfill the function for which it was intended.

Before the manufacture of the steel structures starts, a preliminary programme for factory tests shall be provided by the Supplier for the Engineer's approval. In addition to the programme the Supplier shall **confirm date, time, and place for test in writing or by email or fax at least 3 weeks before tests are assumed to take place** unless otherwise stated in these Specifications.

The Supplier shall give a complete description of proposed test methods. The Supplier shall provide all instruments and equipment necessary for testing.

Data on equipment shall be verified by reports of type tests performed by an independent authority in accordance with the ANSI Standard or Equivalent National Standard acceptable to the Purchaser. Such type tests shall have been performed less than 5 years previously on essentially similar equipment.

All test results shall be regarded as part of manuals required in Section TS.02.3.4.

TS.02.15 *Units of Weights and Measures*

All units of weights and measures shall be expressed in metric (SI) System of Measurements with imperial equivalent in parenthesis.

TS.02.16 **Corrosion Protection**

All parts of the plant shall be protected against corrosion in service by approved surface treatment. Protection shall also be provided to prevent corrosion during transportation, storage, and erection.

All surface protection shall be planned and carried out as agreed and to the satisfaction of the Engineer.

Due to the high humidity at the sites, the protection shall be carried out at the Supplier's workshop under the condition that the sizes of the equipment permit.

TS.03 SPECIFICATIONS – STEEL STRUCTURES AND BUSWORK

TS.03.1 STEEL STRUCTURES

TS.03.1.1 General

This section of the Specification covers the design, supply, fabrication, and delivery (CIF) to Kingston Port of steel structures, for the Bellevue 138/69kV Substation, including base plates, anchor bolts, anchor bolt base templates and all other materials necessary for the complete and effective erection of the structures.

The Supplier shall be responsible for preparation of anchor bolt layout plan and anchor bolt reactions for the 138kV and 69kV substation structures. The Supplier shall submit this plan for approval before submitting the steelwork details for approval and finalized in the shortest possible time to facilitate the early preparation of civil designs for structure foundations.

The Supplier shall supply steel structures complete with nuts and bolts, and spring and flat washers as well as anchor bolts.

TS.03.1.2 Standards

Design, detailing and fabrication shall comply with the recommendations contained in American Society of Civil Engineers (ASCE) manuals and reports on engineering practice, No. 52 "Guide for Design of Steel Transmission Towers", second edition, latest revision, and all relevant American Institute of Steel Construction (AISC) standards.

Materials shall be new and shall comply with the latest provision of ASTM A36 and BS-4360, (BSEN10113, 10155, ADM 6825, 6884), or equivalent. All parts shall be hot-dipped galvanized after fabrication according to specification Clause TS.05.6.

TS.03.1.3 Details of Design

The drawings included with these specifications are intended to show the general arrangement and clearances only. The Supplier may vary dimensions and make structural adjustments as required to suit the proposed equipment, but, in general, the overall dimensions and access ways shown on the drawings should be maintained.

LOADING FOR STEEL COMPONENTS

SEISMIC QUALIFICATION:

The Earthquake code to be used for design is the Uniform Building Code (UBC) 1997, Zone 4. The maximum importance factor shall be used.

WIND QUALIFICATION

The wind code to be used for design is the Caribbean Uniform Building Code (CUBiC) 1985; Part 2: Section 2: Structural Design Requirements, WIND LOAD. The basic design wind speed for Jamaica is 67 m/s (3 sec gust). The greatest importance factor should be used.

GENERAL LOADING QUALIFICATION:

The codes to be used for the overall design of the steel components while checking the allowable stresses, combined stress, shear, deflection, torsion, slenderness, strength, stability against overturning and sway, fracture due to fatigue, brittle fracture, vibration, corrosion, and durability, etc. are B.S. 5950 part 1, B.S. 449 part 2, ASCE or AISC.

a) Vertical (dead) Loading

The weight of the conductors, ground wire, insulator strings, workers, the structural steel and equipment to be supported shall be considered.

b) Wind Pressure (Not Including Factor of Safety)

- On conductors and earth-wires:
105.4daN/m² on projected area
- On insulators and all other circular section:
105.4daN/m² on projected area
- On lattice structures or beam structures, and column structure:
284.2daN/m² on projected area

c) Factor of Safety

The structures shall be designed so that no failure or permanent distortion shall occur when a load equivalent to 1.4 times the maximum simultaneous working load is applied or as otherwise dictated in B.S. 5950.

d) Acceptance criteria for member stresses:

Member stresses shall not exceed the following values:

- The total stresses in the porcelain or composite bushings including dead, pressure, normal operating, and seismic shall not exceed 40 per cent of the ultimate strength.
- The total stresses in steel and ductile aluminum components shall not exceed the allowable stresses specified in the latest revision of the Uniform Building Code with a 1/3 increase for seismic forces where allowed.
- The total stresses in cast aluminum components shall not exceed 40 percent of ultimate strength.

e) Ratio of Slenderness for Lattice Structures

The value of slenderness shall not exceed the following:

- | | |
|---|-----|
| i) for main compressed members | 120 |
| ii) for secondary compressed member members | 200 |
| iii) for secondary unstressed members | 250 |
| iv) for all permanent tension members | 400 |

Members whose slenderness exceeds 200 should be checked for self-weight deflection. If this exceeds length/ 1000 the effect of bending should be considered in the design.

All designs inclusive of fabrication, erection, calculations, and drawings shall become the property of the Purchaser.

The design should include the following: -

- i) maximum of one splice per column leg, no splices in beams
- ii) where practical, anchor bolts should be J type
- iii) anchor bolts should be provided with two nuts, one of which will be used for leveling the structure
- iv) anchor bolts should have at least 100mm of thread
- v) an alphanumeric grid should be used on all arrangement drawings associated with the substations
- vi) template to be provided for alignment of the anchor bolts (shipped with anchor bolts)

TS.03.1.4 Fabrication

Each field piece shall be plainly marked with an identification mark as indicated on the Supplier's erection drawings. These marks shall be unique for each or similar members.

Marks shall be stamped into the material with a metal dye before galvanizing and characters shall be at least 13 mm (1/2 in.) high.

Additionally, duplicate marks in block characters 25 mm (1 in.) high shall be printed on each field piece after galvanizing. These marks shall be located adjacent to the dye marks and shall be made with black indelible marker.

TS.03.1.5 Materials

All steel used for the structures shall have a high yield point of at least 250N/mm² and an ultimate tensile strength of not less than 400 N/mm² and shall be subject to the approval of the Engineer. No member shall be thinner than 4.76 mm (3/16 in.).

TS.03.1.6 Galvanizing

All structural steel shall be hot-dipped galvanized after fabrication in accordance with the latest revision of ASTM Specification A123, A143 and A383, with 600g/m² coating of zinc.

Bolts, nuts, flat and lock washers, and similar parts shall be galvanized with 400g/m² coating of zinc as per ASTM A153.

If any galvanized part is found to be imperfect, such part must be replaced. The entire expense involved in the replacement of the imperfect part shall be borne by the Supplier.

To avoid the formation of white rust on the galvanized surface of iron and steel articles, the galvanized surface shall be treated with an approved dichromate solution process immediately following galvanizing. The coating of dichromate shall be sufficient to meet a 48-hour salt spray test performed in accordance with ASTM B201.

TS.03.1.7 Workmanship

The cutting, drilling, punching, and bending of all fabricated steelwork shall be in accordance with the best practice for the materials being used and subject to the approval of the Purchaser. Diameter of bolt holes shall not be more than 1.5 mm larger than the diameter of the bolts.

All structures shall have 16-mm diameter holes in two convenient opposite locations above the base to accommodate an approved bolted ground connector. Structures, which have overhead shield wires or ground wires terminated, shall have 9/16 dia. holes at one (1) meter intervals along the

structure length to accommodate bolted cable clamps supporting ground cable connection to the equipment.

TS.03.1.8 Tests

Samples of all materials used in the fabrication of the substation structures including nuts, bolts, washers, and brackets, shall be tested in accordance with ASTM standards as appropriate. The Supplier shall submit test results from a recognized independent testing laboratory.

The 13.8kV structures shall be trial assembled prior to galvanizing at the fabricators works to ensure correct assembly on site.

TS.03.1.9 Packaging for Shipment

Structural steel bundles shall be marked with the following: -

- (i) Gross, tare, and net weights in kilograms
- (j) Piece mark, quantity, and item number.
- (k) Supplier and specification number and project name
- (l) Bolts and small fittings shall be double stacked, boxed or supplied in kegs
- (m) Structures shall be shipped unassembled
- (n) Banding of galvanized bundles shall be of rust proof material to prevent staining
- (o) All bolts, nuts and other miscellaneous items shall be segregated according to size and material and packed in separate boxes or kegs and clearly labeled for identification
- (p) Material shall be properly packed on pallets with spacers between members to prevent injury to galvanizing and painting, to prevent distortion of members during transit, and to facilitate unloading
- (q) All small pieces and light materials shall be carefully boxed, crated, or otherwise protected for shipment
- (r) All parts for any structures shall be included in the same shipment
- (s) All bundles shall include parts for one structure only

TS.03.2BUS WORK AND INSULATORS

TS.03.2.1 General

This Specification covers the design, manufacture, testing, and delivery of the following 138kV and 69kV steel structure and associated bus woks:

- Four (4) 138kV low switch stands
- One (1) 138kV high switch stand
- One (1) 69kV switch stand
- Twelve (12) 138kV low bus support stands
- Three (3) 138kV high bus support stands
- Three (3) 138kV single PT stands
- Three (3) 69kV single PT stands
- Anchor bolts with nuts and flat washers
- One lot bus materials
 - 2 inches and 3 inches diameter Schedule 40 aluminum tubes
 - Post insulators: 138kV insulators (Extra Creep – 3.1 cm/kV, composite)
 - Connectors and hardware
 - Contact grease for all connectors
- One lot miscellaneous materials – stainless steel bolts, flat washers, lock washers for installation of bus connectors, etc.

All materials furnished shall be suitable for operation under all possible local conditions.

TS. 03.2.2 Standards and Codes

The equipment and materials shall comply with the requirements of all applicable ANSI and ASTM standards.

If this Specification conflicts in any way with any of the above standards or codes, this Specification shall have precedence and shall govern. However, the Bidder shall point out these conflicts in its Bid.

TS. 03.2.3 Design Criteria

(a) Layout

The layout of the substation shall conform generally with the arrangement drawings, which form part of this Specification.

(b) Clearances

Minimum electrical clearances shall be as follows:

	138kV
Phase to ground between rigid metal parts	1300 mm
Phase to phase between rigid metal parts	1600 mm
Between overhead live parts and grade	4000 mm
Between live parts and roadways	7700 mm

(c) Conductors and Shield Wires – Not Applicable

Conductors shall conform to the following:

- Overhead shield wire shall be extra high strength galvanized steel cable manufactured to ASTM-A363-03 standard.
- Strain bus shall be hard drawn, bare, stranded AAAC aluminum and copper alloy conductors as follows:
 - 559.5 MCM Aluminium conductor (supplied by JPS)
 - 500 MCM Hard Drawn Class B Copper Conductor (supplied by JPS)
- **Rigid/hard drawn copper tubular bus** shall be Schedule 80, 3" Standard Diameter: 2.892" inside diameter; 3.5" outer diameter.
- **Rigid/hard drawn copper tubular bus** shall be Schedule 80, 2-1/2" Standard Diameter: 2.315" inside diameter; 2.875" outer diameter.

Phase to phase distance between copper tubes shall be 1000MM

(d) Loading

Buses, connections, and bus supports shall be designed to withstand the forces resulting from short circuits and wind without exceeding the stress and deflection limits specified below.

- Short-circuit forces shall be those resulting from the symmetrical fault currents listed in TS.02.7 – System Characteristics.
- Wind pressure shall be:
 - 105.4daN/m² for curved surfaces and conductors
 - 284.2 daN/m² for flat surfaces
- **Seismic Load as for SEAOC 1975 with Z factor of 0.5**

(e) Rigid Bus

Rigid bus shall be sized to limit sag or deflection under dead load conditions to not more than

- 1/150 of the unsupported length for a single span
- 1/200 of the unsupported length for continuous spans.

Provision shall be made for expansion and contraction of elements due to temperature variations as well as relative displacements of support structures. Expansion fitting shall be located as required.

Taps to rigid bus or connection of rigid bus to equipment terminals shall be made using four-bolt terminals (or equivalent) bolted to tube with expansion connector if required.

End caps or corona bells shall be installed in all rigid bus to prevent the intrusion of moisture and shall be of the drive fit type.

Rigid bus shall be arranged in a manner such that it can be extended without difficulty.

Rigid bus to rigid bus connections shall be made by bolting. Rigid bus section shall be continuous between supports. Welded splices between supports will not be permitted.

Precautions shall be taken as required to limit vibration in tubular buses, either through installation of a damping cable or insertion type torsion dampers within tube. In general, damping will be required when ratio of span length to bus diameter exceeds 80.

(f) Stresses

Maximum stresses shall not exceed the following limits:

- 50% of ultimate tensile or 67% of yield stress, whichever is the least, under conditions of maximum design load as given in Clause TS.03.2.3 (d) above.
- 20% of ultimate tensile stress under condition of self-weight.

(g) Corona

Conductors, buses, taps, joints and energized portions of bus supports, strain and suspension assemblies shall be free of audible and visible corona when subjected to 1.15 times equivalent line to ground voltage. The corona-free requirement shall be applicable under the following environmental conditions: standard temperature and atmospheric pressure free of industrial contamination and free of precipitation, but at 90% relative humidity.

Strain and rigid buses shall be designed so that voltage stress shall not exceed an equivalent value of 16.5 kV/cm at sea level and rated line-to-ground voltage.

(h) Temperature Rise

Conductors shall be designed to the following temperature rise limitations.

- Continuous Current

All buses shall be designed to limit the temperature rise, with full sunshine and 0.61 m/s crosswind, to a maximum conductor temperature of 75°C when carrying the currents specified on the drawings.

- Short-Circuit Currents

All buses and connections shall be able to withstand the short-circuit current specified in section TS.2.7 "System Characteristics" of these specifications for one (1) second without exceeding a final temperature of 200°C. Initial temperature shall be the maximum temperature specified above for continuous current carrying capacity.

(i) Connectors

All connectors shall be of the **bolted** type, welded connectors are not acceptable.

The current carrying capacity of each connector shall not be less than the conductor to which it is to be applied. Connectors shall be compatible with the maximum conductor temperature.

The bores of all bolted connectors for aluminum stranded or tubular conductor shall be the correct diameter to fit the contour of the conductor to which it is to be applied.

The clamping elements of bolted type connectors shall have a minimum contact length along conductor of 100 mm.

(j) Tap

Risers and connection from incoming lines and strain buses to equipment shall be of the compression type with an intermediate bolted connection to allow disconnection.

(k) Dead Ends – Not Applicable

Strain bus terminations shall be of compression type. Fittings for tension strings shall have a minimum ultimate strength of 95% of conductor ultimate strength. Provision shall be made for adjusting strain bus tensions by using turnbuckles.

Incoming shield wires shall be terminated with a steel compression dead end and insulator assembly. The assembly shall have an ultimate strength of not less than 95% of the shield wire ultimate strength.

(l) Shielding – Not Applicable

The switchyard shall be designed so that effective shielding is applied to all phase conductors and equipment such that lightning strokes approaching phase conductors and equipment will terminate on the overhead shield wires or masts.

BIL of 110kV is assumed in calculating rolling sphere diameter.

Shield wire shall be utilized throughout except where effective shielding is only possible using masts.

Effective shielding shall be designed in accordance with system parameters.

Shielding: 5/16" EHS Galvanized Steel (Grade C) shield wire cable

The overhead shield wire shall have the following characteristics:

– Type:	EHS 5/16" mm
– Standard	ASTM A383
– Stranding:	7 x 2.64 mm ²
– Area:	38.3 mm ²
– Diameter:	7.92 mm
– Weight:	0.305 kg/m
– UTS:	5085 kgf

(m) Insulators

The 138kV bus and equipment shall be insulated to operate under maximum continuous voltage of 145 kV and with a basic insulation level of 650 kV. Composite insulators with extra creep shall be used.

Composite post type insulators shall have the following characteristics:

– Standard	ASTM C29.9
– Nominal Voltage	138kV
– Maximum Voltage	145kV
– Voltage Class:	138kV
– Total length:	1372 mm
– Leakage distance:	2946 mm
– Cantilever strength:	7.56kN

- Tensile strength: 44kN
- **Average Flashover Voltage:**
 - Low Frequency: Dry --
 - Low Frequency: Wet 275 kV
- **Critical impulse Flashover:**
 - Positive: 710 kV
- Bolt Circle (Top/Bottom) 5 inches

Values specified are the minimum requirements. Actual values are to be determined by the Supplier.

PART 7
SCHEDULES

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SCH.01 Schedule of Requirements

The Supplier shall design, manufacture and supply (CIF to Kingston Port, Jamaica) four (4) 138kV low switch stands, one (1) 138kV high switch stand, one (1) 69kV switch stand, twelve (12) 138kV low bus support stands, three (3) high bus support stands, three (3) 138kV single PT stands, three (3) 69kV single PT stands, and bus-work.

ITEM		QTY	UNIT
NO.	DESCRIPTION		
1	Low switch stand (2741 mm), galvanized steel, for 138kV bay complete with bolts, nuts, flat washers, lock washers, etc.	4	Lot
2	High switch stand (5241 mm), galvanized steel, for 138kV bay complete with bolts, nuts, flat washers, lock washers	1	Lot
3	Switch stand, galvanized steel, for 69kV bay complete with bolts, nuts, flat washers, lock washers, etc.	1	Lot
4	Low bus support stand (3033 mm), galvanized steel, for 138kV bay complete with bolts, nuts, flat washers, lock washers, etc.	12	Lot
5	High bus support stand (5533 mm), galvanized steel, for 138kV bay complete with bolts, nuts, flat washers, lock washers, etc.	3	Lot
6	Single PT stand, galvanized steel, for 138kV bay complete with bolts, nuts, flat washers, lock washers, etc.	3	Lot
7	Single PT stand, galvanized steel, for 69kV bay complete with bolts, nuts, flat washers, lock washers, etc.	3	Lot
8	Anchor bolts for 138kV low switch stand complete with bolts, nuts, flat washers (4 bolts per structure)	16	Set
9	Anchor bolts for 138kV high switch stand complete with bolts, nuts, flat washers (4 bolts per structure)	4	Set
10	Anchor bolts for 69kV switch stand complete with bolts, nuts, flat washers (4 bolts per structure)	4	Set
11	Anchor bolts for 138kV low bus stand complete with bolts, nuts, flat washers (4 bolts per structure)	48	Set
12	Anchor bolts for 138kV high bus stand complete with bolts, nuts, flat washers (4 bolts per structure)	12	Set
13	Anchor bolts for 138kV single PT stand complete with bolts, nuts, flat washers (4 bolts per structure)	12	Set
14	Anchor bolts for 69kV single PT stand complete with bolts, nuts, flat washers (8 bolts per structure)	12	Set
15	Bus-work and connectors (See tender drawings)	1	Lot
16	Miscellaneous stainless-steel bolts, nuts, and washers for bus connectors and insulators.	1	Lot

SCH.02 SCHEDULE OF PRICES**SCH.02.1 Material Supply – Steel Structures (Excel to be fill out along with this form)**

NO.	DESCRIPTION	TS	UNITS	QTY	PRICES, CIF KGN	
					Unit	Total
A	Steel Structures – 138kV and 69kV Buses					
1.1	Low switch stand (2741 mm), galvanized steel, for 138kV bay complete with bolts, nuts, flat washers, lock washers, etc.		Lot	4		
1.2	High switch stand (5241 mm), galvanized steel, for 138kV bay complete with bolts, nuts, flat washers, lock washers		Lot	1		
1.3	Switch stand, galvanized steel, for 69kV bay complete with bolts, nuts, flat washers, lock washers, etc.		Lot	1		
1.4	Low bus support stand (3033 mm), galvanized steel, for 138kV bay complete with bolts, nuts, flat washers, lock washers, etc.		Lot	12		
1.5	High bus support stand (5533 mm), galvanized steel, for 138kV bay complete with bolts, nuts, flat washers, lock washers, etc.		Lot	3		
1.6	Single PT stand, galvanized steel, for 138kV bay complete with bolts, nuts, flat washers, lock washers, etc.		Lot	3		
1.7	Single PT stand, galvanized steel, for 69kV bay complete with bolts, nuts, flat washers, lock washers, etc.		Lot	3		
1.8	Anchor Bolts		Lot	1		
1.9	Miscellaneous Materials		Lot	1		
TOTAL						

Name of Bidder _____

Currency in Bid _____

Signature of Bidder _____

SCH.02.2 Material Supply – Bus-work (Excel to be fill out along with this form)

CONNECTORS MAY BE SEFCOR OR EQUIVALENT

NO.	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY	UNITS	PRICES, CIF KGN	
						Unit	Total
B	Aluminum Connectors – 138kV Bus						
2.1	138kV Substation Post Insulator	Vanguard	VTR288SSG	15	Each		
2.3	3" SPS Schedule 40 Aluminum Tube, 20-foot lengths			6	Length		
2.4	2" SPS Schedule 40 Aluminum Tube, 20-foot lengths			2	Length		
2.5	15° angle bolted pipe main to pipe tap, 3" pipe main to 2" pipe tap, aluminum	SEFCOR	ATT15-6258	13	Length		
2.6	Angle bolted pipe main to two pipe taps, 3" pipe main to 2" pipe taps, aluminum	SEFCOR	AVT15-6258	7	Length		
2.7	Tee connector, 3" pipe to 350 - 650 MCM cable, aluminum	SEFCOR	ATRCT-6224	7	Length		
2.8	Terminal connector 556 - 1000 MCM Al to 4-hole NEMA pad, aluminum	SEFCOR	AFNC-34-4A	39	Each		
2.9	Expansion terminal connector, 3" pipe to 4-hole NEMA pad, aluminum	SEFCOR	AFXT-62-4A	15	Each		
2.10	Bus Support(rigid & slide) 3" IPS Aluminum tube to 5" BC Insulator	SEFCOR	ASTI-62-5	15	Each		
2.11	Bus Support (flexible) for 3" IPS Aluminum tube to 5" BC Insulator	SEFCOR	AXCTO-62-5	6			
2.12	End Plug for 3" IPS Dia. Aluminum Tubing	SEFCOR	DPS-62-AL	60	Each		
2.13	End Plug for 2" IPS Dia. Aluminum Tubing	SEFCOR	DPS-58-AL	24	Each		
2.14	Coupler, Bolted, 3" Al Tube to 3" Al Tube	SEFCOR	ASCT-62-62	8	Each		
2.15	Terminal connector 3" pipe to 4-hole NEMA pad, aluminum	SEFCOR	AFNT-62-4A	7	Each		
TOTAL							

SCH.02.3 Spare Parts (Excel to be fill out along with this form)

Bidder shall provide separate prices for recommended spare parts and tools required for continuous operation.

ITEM NO.	PART DESCRIPTION	QTY	UNIT	PRICES	
				Unit	Total
1					
2					
3					
4					
5					
6					
7					
8					
TOTAL					

SCH.03 SCHEDULE OF DELIVERY

Steel Structure and Busworks

Purchaser's Required Delivery: Six (6) Months A.R.O.

Supplier's Proposed Delivery: _____

Name of Bidder: _____

Signature of Bidder: _____

SCH.04 Schedule of Technical Data**SCH.04.01 Steel Structures (Excel to be fill out along with this form)**

No.	Characteristics	Specified	Offered
1	Manufacturer	Required	
2	138kV switch stand	Lattice	
3	69kV switch stand	I-beam	
4	138kV bus support stand	Hallow steel	
5	138kV PT stand	Hallow steel	
6	69kV PT stand	Lattice	
7	Galvanized coating (ASTM A123/ A123M) for steel structures	85 μM /600g/m ²	
8	Galvanized Anchor Bolts included	Required	
9	Galvanized bolts, lock washers and flat washers included (for assembly)	Required	
10	Galvanized coating (ASTM A123/ A123M) for bolts	55 μM /390g/m ²	
11	Lightning masts	Not Applicable	
12	Any other information specifically requested, or which may be useful to the Purchaser	Required	

SCH.04.02 Shield Wire – NOT REQUIRED

SCH.04.3 Aluminum Pipes (Excel to be fill out along with this form)

Number	Characteristics	Specified	Offered
1	3" Aluminum Tube Nominal Pipe		
1.1	Manufacturer	Required	
1.2	Material	Aluminum	
1.3	Type	Hard Drawn (H.D.)	
1.4	Schedule	40	
1.5	Size	3.5 ins outer diameter	
1.6	Thickness	0.154 ins.	
1.7	Electrical Resistance DC (@ 20°C)	6.897 Micro Ω per foot	
1.8	AC Current Rating @ 75 °C, 50 Hz. Emissivity =0.85	1865 A	
2	2" Aluminum Tube Nominal Pipe Size		
2.1	Manufacturer	Required	
2.2	Material	Aluminum	
2.3	Type	Hard Drawn (H.D.)	
2.4	Schedule	40	
2.5	Size	2.375 ins outer diameter	
2.6	Thickness	0.216 ins.	
2.7	Electrical Resistance DC (@ 20°C)	14.30 Micro Ω per foot	
2.8	AC Current Rating @ 75 °C, 50 Hz. Emissivity =0.85	1128 A	

SCH.04.4 Insulators (Excel to be fill out along with this form)

Number	Characteristics	Specified	Offered
1	138kV Post Type Composite		
1.1	Manufacturer	Required	
1.2	Material	Composite	
1.3	Standard	ASTM C29.9	
1.4	Basic Impulse Level	650 kV	
1.5	Total Length	1372 mm	
1.6	Technical Reference Number	TR288	
1.7	Leakage Distance	2946 mm	
1.8	Cantilever Strength	7.56kN	
1.9	Tensile Strength	44kN	
1.10	Average Flashover Voltage		
	- Low Frequency Dry		
	- Low Frequency Wet	275 kV	
1.11	Critical Impulse Flashover Positive	710 kV	
1.12	Bolt Circle (Top/Bottom)	5"	

SCH.05 *Schedule of Tender Information*

SCH.05.1 Addenda to Bid Documents

The Bidder has received the following Addenda to the Bid Document prior to submission of this bid.

Addenda No	Dated
------------	-------

For and on behalf of

(Contractor's Name)

Title

Signature of Bidder _____

SCH.05.2 Deviation from Specifications - Minor Modifications

The minor deviations from the specifications are as follows:

Minor changes and modifications to the solution outlined in the Specifications and Drawings.

If there are no deviations from the Technical Specifications, then “No Departure from Technical Specifications” shall be marked in the Schedule of Information.

For and on behalf of

(Contractor's Name)

Title

Signature of Bidder _____

SCH.05.3 Deviation from Specifications - Major Modifications

The major deviations from the specifications are as follows:

If a completely new solution or major modifications are proposed, then a separate set of Attachments shall be prepared and submitted in a separate envelope marked "Alternate Solution".

If there are no deviations from the Technical Specifications, then "No Departure from Technical Specifications" shall be marked in the Schedule of Information.

For and on behalf of

(Contractor's Name)

Title

Signature of Bidder _____

SCH.05.4 Work Program

For and on behalf of

(Contractor's Name)

Title

Signature of Bidder _____

SCH.05.5 Technical Documentation

For and on behalf of

(Contractor's Name)

Title

Signature of Bidder _____