JAMAICA PUBLIC SERVICE COMPANY LIMITED

NEW SPUR TREE SUBSTATION DISTRIBUTION TRANSFORMER PROJECT

RFP# 893146

SUPPLY 24KV AIR-INSULATED SWITCHGEAR

WITH VACUUM CIRCUIT BREAKERS

October 2021

Issued by: Purchasing and Customs

PART 1: INSTRUCTION TO BIDDERS

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IB.01 INTRODUCTION

Invitation to Bidders

The Jamaica Public Service Company Limited, hereinafter referred to as JPS, is hereby inviting proposals from qualified bidders for the design and supply of 24kV air-insulated switchgear with vacuum circuit breakers for the New Spur Tree Distribution Transformer Project.

Background

JPS is a vertically integrated electric utility company, and the sole distributor of electricity for the Island of Jamaica. The Company is engaged in the generation, transmission and distribution of electricity, and also purchases power from a number of independent power producers (IPPs).

Marubeni Corporation of Japan and East West Power Company (EWP) of Korea, are majority shareholders (40% each), with joint ownership of eighty percent of the shares in JPS. The Government of Jamaica and a small group of minority shareholders own the remaining (20%) shares.

JPS serves about 610,000 residential, commercial and industrial customers, through a workforce of approximately 1,600 employees and a network of field offices throughout the island. The Company owns and operates four (4) power stations, eight (8) hydroelectric plants, one (1) wind park, forty-three (43) substations, and approximately 14,000 kilometers of distribution and transmission lines. The total installed generating capacity is 789 MW. The company owns 80%, or 621.0 MW of this capacity and the Government of Jamaica has granted JPS the license to build, own and operate a new 190MW natural gas (LNG) fired combined cycle power plant. The remaining 168MW is owned by independent power producers (IPPs). The company also manages and operates the transmission and distribution system.

Along with the provision of electricity supply, JPS is a key partner in national development. The Company has a vibrant corporate social responsibility portfolio and makes significant contributions in the areas of education, sports, and community development. The Company also has a strong environmental focus and carries out its operations in an environmentally friendly manner.

JPS has the following status with Jamaica Customs – Authorized Economic Operator (AEO). It is an internationally recognized quality mark that indicates JPS supply chain is secure, and the JPS customs procedures and policies are compliant. With this designation, JPS' Warehouse and Procurement Teams are subject to audits and monitoring by Jamaica Customs.

The Office of Utilities Regulation (OUR) has regulatory authority for JPS' operations.

Source of Funds

The Jamaica Public Service Company Limited (JPS) will fund the project for the new distribution transformer to be installed in the New Spur Tree Substation.

Payments to the Contractors will be effected by an International Bank, mutually agreed between JPS and the successful bidder.

Subject of Bid

Work included in this project called "New Spur Tree Substation Distribution Transformer Project" includes supply of material for the construction of bay areas and expansion of the 69kV bus to install a 25/33 MVA Transformer to the New Spur Tree Substation in the parish of Manchester. The works include the extension of the 69kV bus at New Spur Tree Substation which will involve the completion a breaker and a third 69kV bay. As well as, the installation of a 24kV air-insulated switchgear with vacuum circuit breakers. The substation will be commissioned at 69kV/24kV.

The subject of this invitation consists of the design and supply of a 24kV air-insulated switchgear with vacuum circuit breakers as per attached designs (see drawing Nos:

- NST SK - 01 (for Option 1)
- NST SK - 02 (for Option 2)

Partial Bids shall be considered incomplete and will be rejected. The equipment is defined in Section TS.01 "Summary of Work".

Points of Contacts (POC)

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

Name: Mr. Kolonje McKenzie

Mrs. Ann-Marie Woodham

Address: Jamaica Public Service Company Limited

113 Washington Boulevard

Kingston 20, Jamaica WI

Email: komckenzie@jpsco.com

Cc. aaiken@jpsco.com

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.

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 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 and services 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 Performance Bond

Form of Agreement

Purchase Order

(e) Bid Form

(f) Technical Specifications

(g) Tender Drawings

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.07 CLARIFICATION OF BIDDING DOCUMENTS

IB.07.1 A prospective Bidder requiring any clarification of the Bidding Documents may notify the Purchaser in writing or by telefax or by e-mail at the Purchaser's mailing

address, facsimile number, or e-mail address indicated in the Invitation for Bids. The Purchaser may respond in writing to any request for clarification of the Bidding Documents, which it receives from a bidder, no later than five (5) working days prior to the deadline for submission of bids prescribed by the Purchaser in IB.20 herein. Written copies of the Purchaser's response (including any explanation of the query but without identifying the source of inquiry) will be sent to all prospective Bidders that received the Bidding Documents.

IB.08 AMENDMENT OF BIDDING DOCUMENTS

IB.08.1 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.08.2 The amendment will be notified in writing or by telefax or e-mail to all prospective Bidders, which have received the Bidding Documents and will be binding on them.

IB.08.3 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 sole discretion, extend the deadline for the submission of bids.

PREPARATION OF BIDS

IB.09 LANGUAGE OF BID

IB.09.1 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.10 DOCUMENTS COMPRISING THE BID

IB.10.1 The bid prepared by the Bidder shall comprise the following components:

(a) List of all documents that accompany the bid

(b) Forms:

- Bid Form completed in accordance with IB.11
- Filled in Form of Contract Agreement (not signed)

(c) Schedules

- Schedule of Prices should be provided in accordance with Clauses IB.12 and IB.13
- Schedule of Delivery
- Schedule of Technical Data
- Schedule of Tender Information

(d) Documentary evidence established in accordance with Clause IB.14 that the Bidder is qualified to perform the contract if its bid is accepted.

(e) Documentary evidence established in accordance within Clause IB.15 that the goods and ancillary services to be supplied by the Bidders conform to the Bidding Documents.

(f) Bid Security furnished in accordance with Clause IB.16 (the Bid Security is Waived)

(g) Audited Financial Statement

Bidder shall provide the last 3 years Audited Financial Statement.

(h) Supplementary Documents

All other information requested in the Tender Documents or which may be useful to the Purchaser shall be submitted under Schedule of Tender Information.

IB.11 BID FORM

IB.11.1 The Bidder shall complete the Bid Form furnished in the Bidding Documents.

IB.12 BID PRICES

IB.12.1 The Bidder shall provide a Schedule of Prices indicating the unit prices and total Bid Prices of the goods and services it proposes to supply under the Contract.

IB.12.2 The price of the goods shall be quoted CIF Kingston Port, Jamaica (excluding import duties, consular fees and port taxes);

IB.12.3 The Bidder's separation of price components in accordance with para. IB.12.2 above will be solely for the purpose of facilitating the comparison of bids by the Purchaser and will not in any way limit the Purchaser's right to contract on any of the terms offered.

IB.12.4 Fixed Price. All 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.25.

IB.13 BID CURRENCIES

IB.13.1 All international supplier's prices shall quote in United States (US) Dollars.

All Local supplier's prices should be quoted in Jamaican Dollars (JMD).

IB.14 DOCUMENTS ESTABLISHING THE BIDDER'S ELIGIBILITY AND QUALIFICATIONS

IB.14.1 Pursuant to Clause IB.10, the Bidder shall furnish, as part of its bid, documents establishing the Bidder's qualifications to perform the Contract if its bid is accepted.

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IB.14.2 The documentary evidence of the Bidder's eligibility to bid shall establish to the Purchaser's satisfaction that the Bidder, at the time of submission of its bid, is from an eligible source country as defined under Clause IB.02.

IB.14.3 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.

(c) Bidders shall provide the CV's (curriculum vitae) of the Design Engineers designated to work on this contract in the event that their bid is successful, clearly indicating the relevant Schedules for the Engineer(s).

(b) Bidders shall submit with their bids evidence of their experience and eligibility to perform the works of the quality and in the manner prescribed in these Tender Documents and that the Bidder has the financial, technical and production capability necessary to perform the Contract.

The bidder shall not be associated with any firm or person submitting bid for the same work.

If the Bidder is a corporation, the Bid must be signed under seal by duly authorized agents/officers of the Corporation. If the Bid is submitted by two or more partners in a joint venture, each partner shall be treated as being jointly and severally liable/bound to discharge all duties/obligations and responsibilities of the Contract.

IB.15 DOCUMENTS ESTABLISHING GOODS' ELIGIBILITY AND CONFORMITY TO BIDDING DOCUMENTS

IB.15.1 Pursuant to Clause IB.10, 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.

IB15.2 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.

IB15.3 The documentary evidence of the goods' and services' conformity to the Bidding Documents may be in the form of literature, drawings and data, and must include:

(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 use of the goods 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.

IB15.4 For purposes of the commentary to be furnished pursuant to Clause IB.14.3(c) above, the Bidder should note that the 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 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.16 BID SECURITY

(THE BID SECURITY IS WAIVED)

IB.16.1 Pursuant to Clause IB.10, the Bidder shall furnish, as part of its bid, bid security in the amount of not less than 5% of the total of the Schedule of Prices for the Bid.

IB.16.2 The bid security is required to protect the Purchaser against the risk of the Bidder's conduct, which would warrant the security's forfeiture, pursuant to paragraph IB.16.7.

IB.16.3 The bid security shall be denominated in the currency of the bid or and shall be in one of the following forms:

(a) A bank guarantee or irrevocable Letter of Credit issued by a bank located in the Purchaser's country or a foreign bank acceptable to the Purchaser, in the form provided in the Bidding Documents or another form acceptable to the Purchaser and valid for 30 days beyond the validity of the bid

(b) A cashier's check or certified check.

IB.16.4 Any bid not secured in accordance with paragraph IB.16.1 and IB.16.3 shall be rejected by the Purchaser as non-responsive, pursuant to Clause IB.27.

IB.16.5 Unsuccessful Bidder's bid security will be discharged/returned as promptly as possible but not later than 30 days after the expiration of the period of bid validity prescribed by the Purchaser, pursuant to Clause IB.17.

IB.16.6 The successful Bidder's bid security will be discharged upon the Bidder's executing the Contract, pursuant to clause IB.34, and furnishing the performance security, pursuant to Clause IB.35.

IB.16.7 The Bid Security may be forfeited

(a) If the Bidder withdraws its bid during the period of bid validity specified by clause IB.17.1; or

(b) In the case of a successful Bidder, if the Bidder fails;

(i) to sign the Contract in accordance with Clause IB.34; or

(ii) to furnish performance security in accordance with Clause IB.35.

IB.17 PERIOD OF VALIDITY OF BIDS

IB.17.1 Bids shall remain valid for one hundred and twenty days (120) days after the date of bid opening prescribed by the Purchaser, pursuant to Clause IB.20. A bid valid for a shorter period may be rejected by the Purchaser as non-responsive.

IB.17.2 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 e-mail or telefax). The bid security provided under Clause IB.16 shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid.

IB.18 FORMAT AND SIGNING OF BID

IB.18.1 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.18.2 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.18.3 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.19 UPLOAD AND LABELING OF BIDS

IB.19.1 Only Electronic submissions will be accepted, using ShareFile by Citrix. All uploads will be confidential.

1. Respondents must confirm their intention to bid by **October 25, 2021**, 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.20 DEADLINE FOR SUBMISSION OF BIDS

IB.20.1 Bids must be received by the Purchaser at the address specified under paragraph IB.19.1 no later than 11:59 pm Eastern Standard Time on **Thursday, November 4, 2021.**

RFP CALENDAR		
ACTIVITY	**DUE DATE**	**RESPONSIBILITY**
RFP date	October 5, 2021	JPS
Bidder submits questions on RFP	October 14, 2021	Bidder
Final date to respond to all queries	October 20, 2021	JPS
Bidder provide their intension to Bid	October 25, 2021	Bidder
Completion of RFP and deadline for submission of bids to JPS	November 4, 2021	Bidder
Bid Opening	November 5, 2021	JPS

IB.20.2 The Purchaser may, at its discretion, extend this deadline for the submission of bids by amending the Bidding Documents in accordance with Clause IB.08, 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.21 LATE BIDS

IB.21.1 Any bid received by the Purchaser after the deadline for submission of bids prescribed by the Purchaser, pursuant to Clause IB.20, will be rejected and/or returned unopened to the Bidder.

IB.22 MODIFICATION AND WITHDRAWAL OF BIDS

IB22.1 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.22.2 The Bidder's modification or withdrawal notice shall be prepared, sealed, marked and dispatched in accordance with the provisions of Clause IB.19 with the inner envelopes additionally marked **Modification** or **Withdrawal** as appropriate. A withdrawal notice may also be sent by telefax or e-mail but followed by a signed confirmation copy, post marked not later than the deadline for submission of bids.

IB.22.3 No bid may be modified subsequent to the deadline for submission of bids.

IB.22.4 No bid shall be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Bid Form. Withdrawal of a bid during this interval may result in the Bidder's forfeiture of its bid security, pursuant to Clause IB.16.7.

BID OPENING AND EVALUATION

IB.23 OPENING OF BIDS BY PURCHASER

IB.23.1 The Purchaser will open bids privately, November 5, 2021 at:

Jamaica Public Service Company Limited,

113 Washington Boulevard

Kingston 20, Jamaica

IB.23.2 The Bidders' names, bid prices, modifications, bid withdrawals and the presence or absence of the requisite bid security and such other details as the Purchaser, at its discretion, may consider appropriate will be recorded at the opening.

IB.24 CLARIFICATION OF BIDS

IB.24.1 To assist in the examination, evaluation and comparison of bids the Purchaser may, at its sole 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.25 PRELIMINARY EXAMINATION

IB.25.1 The Purchaser will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required securities have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.

IB.25.2 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 Bidder 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.25.3 Prior to the detailed evaluation, pursuant to Clause IB.27, 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.25.4 A bid determined as not substantially responsive will be rejected by the Purchaser and shall not subsequently be made responsive by the Bidder by correction of the non-conformity.

IB.25.5 The Purchaser may waive any minor informality or non-conformity or irregularity in a bid that does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.

IB.26 CURRENCY

IB.26.1 All international supplier's prices shall quote in United States (US) Dollars.

All Local supplier's prices should be quoted in Jamaican Dollars (JMD).

IB.27 EVALUATION AND COMPARISON OF BIDS

Bidders will be evaluated based on the following criteria:

TECHNICAL EVALUATION and FINANCIAL

CRITERIA	Score
Compliance to JPS specification and Requirement	Pass/Fail
Financial capability to administer the project financing	Pass/Fail

COMMERCIAL EVALUATION

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

IB.27.1 The Purchaser will evaluate and compare the bids previously determined to be substantially responsive, pursuant to Clause IB.25.

IB.27.2 The Purchaser's evaluation of a bid will exclude and not take into account:

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

IB.27.3 The Purchaser's evaluation of a bid will take into account:

In the case of goods and services of local origin, General Consumption Taxes, which will be payable on the goods and services if the Contract is awarded to the Bidder.

IB.27.4 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 paragraph IB.27.5 and in the Technical Specifications:

(a) Delivery schedule offered in the bid;

(b) Technical capability and qualifications

IB.27.5 Pursuant to paragraph IB.27.4, 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 baseline, a delivery "adjustment" price will be calculated for other bids at 5% of the CIF price for each month of delay beyond the baseline and this will be added to the bid price for evaluation.

IB.28 CONTACTING THE PURCHASER

IB.28.1 Subject to Clause IB.24, 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.28.2 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.29 POST-QUALIFICATION

IB.29.1 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.29.2 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.14, as well as such other information, as the Purchaser deems necessary and appropriate.

IB.29.3 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.30 AWARD CRITERIA

IB.30.1 Subject to Clause IB.32, 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.31 PURCHASER'S RIGHT TO VARY QUANTITIES AT TIME OF AWARD

IB.31.1 The Purchaser reserves the right at any time of award of Contract to increase or decrease the quantity of goods and services specified without any change in the unit price or other terms and conditions.

IB.32 PURCHASER'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS

IB.32.1 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.33 NOTIFICATION OF AWARD

IB.33.1 Prior to the expiration of the period of bid validity, the Purchaser will notify the successful Bidder in writing by registered letter or by e-mail or by telefax, to be confirmed in writing by registered letter, that its bid has been accepted.

IB.33.2 The notification of award will constitute the formation of the Contract. For the avoidance of doubt, the terms of the Contract will be contained in the Contract Form mentioned in Clause IB.34 below.

IB.33.3 Upon the successful Bidder's furnishing of performance security pursuant to Clause IB.35, the Purchaser will promptly notify each unsuccessful Bidder and will discharge their respective bid security, pursuant to Clause IB.16.

IB.34 SIGNING OF CONTRACT

IB.34.1 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.

IB34.2 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.35 PERFORMANCE SECURITY

IB.35.1 In keeping with the Conditions of the Contract the successful Bidder shall, within fourteen (14) calendar days of the receipt of notification of award from the Purchaser furnish the performance security in the Performance Security Form provided in the Bidding Documents or another form acceptable to the Purchaser.

IB.35.2 If the performance Security to be provided by the successful bidder is in the form of a bank guarantee it shall be issued either:

(a) as at the Bidder's option, by a bank located in the country of the Purchaser or by a foreign bank through a correspondent bank located in the country of the Purchaser, or

(b) with the prior written agreement of the Purchaser, directly by a foreign bank acceptable to the Purchaser.

If the Performance Security is to be provided by the successful Bidder in the form of a bond, it shall be issued by a bonding insurance company, which has been previously approved in writing to be acceptable by the Purchaser.

IB.35.3 Failure of the successful Bidder to comply with the requirement of Clause IB.34 or Clause IB.35 shall result in the Purchaser having the right but not the obligation to terminate the Contract 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;

(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 as 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 Performance Security

GC.07.1 Within fourteen (14) days after the Supplier's receipt of notification of award of the Contract, the Supplier shall furnish performance security to the Purchaser in the amount specified in the Special Conditions of Contract.

GC.07.2 The proceeds of the performance security shall be payable to the Purchaser as liquidated damages for the Supplier's failure to satisfactorily perform its obligations under the Contract and not as a penalty.

GC.07.3 The Performance Security shall be denominated in the currency of the Contract or in freely convertible currency acceptable to the Purchaser, and shall be in one of the following forms:

(a) A bank guarantee or irrevocable Letter of Credit, issued by a bank located in the Purchaser's country or abroad acceptable to the Purchaser, and in the form provided in the Bidding Documents or another form acceptable to the Purchaser; or

(b) A cashier's check or certified check.

GC.07.4 The performance security will be discharged by the Purchaser and returned to the Supplier not later than 30 days following the date of completion of the Supplier's performance obligations, including any warranty obligations, under the Contract.

GC.08 Inspections and Tests

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.08.1 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.08.2 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.08.3 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.08.4 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.08.5 Nothing in Clause GC.08 shall in any way release the Supplier from any warranty or other obligations under this Contract.

GC.09 Packing

GC.09.1 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.09.2 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.18, in any subsequent instructions ordered by the Purchaser.

GC.10 Delivery and Documents

GC.10.1 Delivery of the Goods shall be made by the Supplier in accordance with the terms specified by the Purchaser in its Delivery requirement 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 Purchasers Country.

GC.10.2 Subject to SC-7 For the purposes of this Contract, **FOB, C&F, 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.11 Insurance

GC.11.1 The Goods supplied under the Contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in the Special Conditions of Contract.

GC.11.2 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 C&F basis, marine insurance shall be the responsibility of the Purchaser.

GC.12 Transportation

GC.12.1 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.12.2 Where the Supplier is required under the Contract to deliver the Goods **C&F 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.12.3 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.12.4 In all of the above cases, transportation of the Goods after delivery shall be the responsibility of the Purchaser.

GC.12.5 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.13 Incidental Services

GC.13.1 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 startup 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.13.2 Prices charged by the Supplier for the preceding incidental services, if not included in the Contract Price for the Goods, shall be agreed upon in advance by the parties

and shall not exceed the prevailing rates charged by other parties by the Supplier for similar services.

GC.14 Spare Parts

GC.14.1 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:

(i) Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirement; and

(ii) Following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if and when requested.

GC.15 Warranty

GC.15.1 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.15.2 This warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered (and commissioned) to the final destination indicated in the Contract.

GC.15.3 The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty.

GC.15.4 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.15.5 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.16 Payment

GC.16.1 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.16.2 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.10, and upon fulfillment of other obligations stipulated in the contract.

GC.16.3 Payments shall be made promptly by the Purchaser within sixty (60) days after receipt of bill of lading.

GC.16.4 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.17 Prices

GC.17.1 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.18 Change Orders

GC.18.1 The Purchaser may at any time, by a written order given to the Supplier pursuant to Clause GC.31, 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.18.2 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.19 Contract Amendments

GC.19.1 Subject to Clause GC.18, 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.20 Assignment

GC.20.1 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.21 Subcontracts

GC.21.1 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.21.2 Contracts with Subcontractors must comply with the provisions of Clause GC.03, GC.05, GC.08 and GC.15.

GC.22 Delays in the Supplier's Performance

GC.22.1 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.22.2 A delay by the Supplier in the performance of its delivery obligations shall, subject to the provisions of clause GC.25, render the Supplier liable to any or all of the following sanctions: forfeiture of its performance security, imposition of liquidated damages, and/or termination of the Contract for default, unless the reason for such delay is acceptable to the Purchaser.

GC.22.3 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.22.2.

GC.23 Liquidated Damages

GC.23.1 TIME IS OF THE ESSENCE FOR THE EXECUTION OF THIS CONTRACT.

Subject to Clause GC.25, 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 percent (2%) 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 fourteen percent (14%) of the delayed Goods or Services contract price. Once the maximum is reached, the Purchaser may consider termination of the Contract.

GC.24 Termination for Default

GC.24.1 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.22; or

(b) If the supplier fails to perform any other obligation(s) under the Contract.

GC.24.2 In the event the Purchaser terminates the Contract in whole or in part, pursuant to para. GC.24.1, 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.25 Force Majeure

GC.25.1 Notwithstanding the provisions of Clauses GC.22, 23, 24, the Supplier shall not be liable for forfeiture of its performance security, 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.25.2 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.25.3 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.26 Termination for Insolvency

GC.26.1 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.27 Termination for Convenience

GC.27.1 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.27.2 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.28 Resolution of Disputes

GC.28.1 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.28.2 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. These mechanisms may include, but are not restricted to, conciliation mediated by a third party, adjudication in an agreed national or international forum, and/or international arbitration. The mechanism shall be specified in the Special Conditions of Contract.

GC.29 Governing Language

GC.29.1 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.30, 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.30 Applicable Law

GC.30.1 The Contract shall be interpreted in accordance with the laws of the Purchaser's country.

GC.31 Notices

GC.31.1 Any notice given by one party to the other pursuant to the Contract shall be sent in writing or by telegram or telefax and confirmed in writing to the address specified for that purpose in the Special Conditions of Contract.

GC.31.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

GC.32 Taxes and Duties

GC.32.1 A foreign Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the Purchaser's country.

GC.32.2 A local Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser.

PART 3: SPECIAL CONDITIONS

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SC.01 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.02 Definitions (Clause GC.01)

(a) The Purchaser is The Jamaica Public Service Company Limited

(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 CIF Kingston, Jamaica, W.I.

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

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

SC.04 Performance Security (Clause GC.07)

The Performance Security shall be in the amount of 10% of the Contract price.

SC.05 Inspection and Tests (Clause GC.08)

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

SC.06 Delivery and Documents (Clause GC.10)

(a) For Imported Goods

Prior to shipment, the Supplier shall notify the Purchaser and its Insurance Company by cable 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 following documents to the Purchaser, with a copy to its Insurance Company:

(i) One (1) Original to JPS and one (1) Original "to Bank" of the Supplier's invoice showing Goods description, quantity, unit price, total amount;

(ii) One (1) Original to JPS and one (1) Original "to Bank" of negotiable, clean, on-board bill of lading marked freight prepaid and one (1) copy of non-negotiable bill of lading;

(iii) One (1) Original to JPS and one (1) Original "to Bank" of the packing list identifying contents of each package;

(iv) One (1) Original to JPS and one (1) Original "to Bank" of the Insurance certificate;

(v) One (1) Original to JPS and one (1) Original "to Bank" of the Manufacturer's/Supplier's guaranty certificate;

(vi) Inspection certificate, issued by JPS and/or 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.

(b) For Domestic Goods

(i) Original and two (2) copies of the Supplier Invoice showing goods description, quantity, unit price, total amount;

(ii) Delivery note/railway receipt/truck receipt;

(iii) Original and two (2) copies of the Manufacturer's/Supplier's guaranty certificate;

(iv) Inspection Certificate issued by the nominated inspection agency, and the Supplier's factory inspection report.

SC.07 Insurance (Clause GC.11)

Notwithstanding GC 10.2 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.08 Incidental Services (Clause GC.13)

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

SC.09 Spare Parts (Clause GC.14)

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.10 Warranty (Clause GC.15)

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

SC.11 Payment (Clause GC.16)

(a) Payment for Imported Goods shall be made promptly by the Purchaser within 60 days of receipt of bill of lading.

Payment of Local Currency Portion

Payment shall be made in Jamaican dollars within thirty (30) days of presentation of claim supported by a certificate from the Purchaser declaring that the Goods have been delivered and that all other contracted Services have been performed.

SC.12 Resolution of Disputes (Clause GC.28)

The dispute resolution mechanism to be applied pursuant to Clause GC.28 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.

SC.13 Notices (Clause GC.31)

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.

6 Knutsford Boulevard Kingston, 5

Kingston, Jamaica.

Supplier: _____

_____

_____

_____

_____

PART 4: MATERIAL LISTING

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Materials to be Supplied

The supplier shall design and supply a 24kV air-insulated switchgear with vacuum circuit breakers for the two options listed below:

Option 1:

The equipment consists of one (1) 24kV, 1200 amps, metal-clad air-insulated switchgear with ARC protection complete with two (2) feeder vacuum circuit breakers as shown in drawing # NST SK - 01 and include special tools for assembly and maintenance and recommended spares.

Option 2:

The equipment consists of one (1) 24kV, 1200 amps, metal-clad air-insulated switchgear with one (1) main vacuum circuit breaker (rated at 1200 amps) and two (2) feeder vacuum circuit breakers (rated at 600 amps) as shown in drawing # NST SK - 02 and include special tools for assembly and maintenance and recommended spares.

PART 5: TECHNICAL SPECIFICATIONS

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TS.01 GENERAL REQUIREMENTS

TS.01.1 Scope of Works

The Supplier shall design, supply, factory test and deliver to Kingston, Jamaica, W.I. all equipment and materials in accordance with these specifications. The Supplier shall also conduct training of the Purchaser's Personnel at site as part of the commissioning.

Option 1:

The equipment consists of one (1) 24-Kv, 1200 amp, metal-clad air insulated Switchgear with ARC protection complete with two (2) feeder vacuum circuit breakers as shown in drawing # NST SK - 01 and include special tools for assembly and maintenance and recommended spares.

Option 2:

The equipment consists of one (1) 24-Kv, 1200 amp, metal-clad air insulated Switchgear with ARC protection complete with one (1) main vacuum circuit breaker (rated at 1200 amps) and two (2) feeder vacuum circuit breakers (rated at 600 amps) as shown in drawing # NST SK - 02 and include special tools for assembly and maintenance and recommended spares.

Each vacuum circuit breaker shall be supplied with microprocessor-based protection relaying, metering, monitoring and control equipment, which supports automatic re-closing feature and single pole tripping.

The switchgear shall include but not be limited to the following main components:

a) Metal-clad switchgear
b) Vacuum circuit breakers
c) Main Bus-bar
d) Current Transformers – Protection Class
e) Voltage Transformers – Protection Class (At least one point for transformer AVR connection)
f) Earth Bus-bar
g) Control Panel
h) Feeder Management Relay c/w overcurrent protection functionality to include 50/51, 50/51N, 50G/51G, 68, 46, 74, 86, 79, U, I, P, Q, S, PF & Energy.
   JPS preference is SEL651R. Model 0651R23DXBAAAD13X2D2XX
i) Metering and Feeder Monitoring Equipment for P.F, Frequency, P, Q, S, KW-h, **Voltage**, **Current** and **Energy**
j) Provision for SCADA – Control, Metering (P, Q, S, PF, Amps per phase, Voltage per phase) & Status (52-b, dry contact)

k) Operation Counter
l) Remote – Local selector switch
m) Trip-Close control switch
n) System Alarm notification - Visual & Audible c/w relay fail alarm

TS.01.2 Work Schedule

The Supplier shall submit within Five (5) working days of acceptance of the bid a general Work Schedule showing key indicating days required for sub-orders and drawing approvals so that the specified delivery date shall 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.01.3 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.

- Equipment arrangement - plan and elevations
- Dimensioned outline drawings, details and weights of all equipment
- Structural steel drawings and calculations
- Equipment foundations drawings
- Equipment design test reports
- Nameplate diagram
- Equipment wiring diagrams
- AC schematic control diagrams
- DC schematic control diagrams
- Manuals for installation, operation and maintenance of the equipment
- Testing and commissioning procedures.

TS.01.4 Submission and Approval of Drawings

The Supplier shall submit three (3) copies of all drawings, and data to the Purchaser for approval.

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 two weeks after receipt of the drawings. The time required for the approval, revision and possible resubmission of drawings must be allowed for in the overall schedule.

The Supplier shall submit for final approval revised copies within two (2) weeks 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.

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

Drawings will be reviewed only for general design, overall dimensions and materials. Approval by the Purchaser of the Supplier's drawings shall not relieve the Supplier of his responsibility for the correctness of his drawings.

After reviewed drawings have been received, the Supplier shall without delay complete all necessary corrections or additions and furnish the Purchaser with three printed copies of each drawing. If minor revisions are made subsequently, three printed copies of the revised drawing shall be forwarded to the Purchaser. Soft copy in AutoCAD 2018 shall also be provided via usb drive for all final drawings.

Drawings 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.01.5 Drawing Format

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:

- The Supplier's name
- The Purchaser's name (Jamaica Public Service Company Limited)
- 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

Outline drawings of major electrical equipment shall be A1 format.
Units of measure and weights shall be expressed in the metric (SI) system of measurements.

TS.01.6 Installation, Operation and Maintenance Manual

The Supplier before shipment of equipment and materials shall furnish seven (7) copies of the installation, operation and maintenance manual. The manual shall contain the following minimum information:

- General descriptive information
- Assembly and/or erection details
- Operating and Maintenance instruction
- Instructions for testing and adjustments
- One copy of each approved drawing including catalog cuts and other pertinent data.
- Test Certificate(s)
- List of recommended spares
- Equipment insulation curves
- Parts identification list for each item of equipment furnished
- Manufacturer's descriptive information and instructions for all accessory equipment

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 from the factory.

TS.01.7 Standards

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

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

NAME	**ABBREVIATIONS**
American National Standards, Inc	ANSI
American Society for Testing and Materials	ASTM
National Electrical Manufacturers Ass.	NEMA
Institute of Electrical and Electronic Engineers, Inc.	IEEE
Insulated Cable Engineers Association	ICEA
American Welding Society	AWS
American Institute of Steel Construction	AISC

TS.01.8 System Characteristics

(a)	System Phase to phase voltage:	24 kV
	Note: SW-Gear rated Nominal Voltage	24kV
	- Maximum operating voltage	27 kV
(b)	System BIL	150kV
(c)	Number of phases	3
(d)	Frequency	50 Hz
(e)	System connection	WYE

(f)	Method of Grounding	Solid Grounding
(g)	Fault level (symmetrical)	12.5kA
(h)	Auxiliary power supply	120 V single phase 240 V Single phase 125 V DC

TS.01.9 Environmental Conditions

(a)	Altitude:	Approx. 791m above sea level.
(b)	Ambient Temperatures:	Maximum 40^{o}C Average 30^{o}C Minimum 15^{o}C
(c)	Atmospheric Conditions:	Tropical climate, and subjected to saline contamination.
(d)	Seismic Coefficient:	0.15g
(e)	Relative Humidity:	maximum - 100% average - 70%

TS.01.10 Preparation for Shipment

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.

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.

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

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

Jamaica Public Service Co. Ltd.
Kingston
Jamaica, W.I.

and any other relevant identification marks.

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

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

TS.01.11 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. Operating coils of relays and meters shall be impregnated with a fungus-inhibiting varnish. 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.

Panels, enclosures and cubicles shall totally enclose the equipment. Doors of panels shall be close fitting and ventilated openings shall be suitably screened to prevent entrance of insects and rodents. All cable entrances to equipment shall be tightly sealed with gland plates.

All enclosures containing motors, instruments, control and switching equipment shall be equipped with anti-condensation heaters. The construction of the enclosures and placement of heaters shall be such as to ensure effective air circulation while avoiding local overheating.

Internal wiring shall be dual insulated thermoplastic or rubber and teflon or halogen based non-flammable insulation suitable for a minimum continuous operating temperature of 105^{o}C. All live and exposed conductors and connections shall be suitably insulated to prevent short-circuiting by vermin.

Prior to shipment, surfaces of wiring and all other parts susceptible to moisture absorption or fungus attack shall receive treatment with fungicidal varnish.

TS.01.12 Design and Workmanship - Switchgear

The design of the equipment and materials shall be such as to give long and continuous service with minimum maintenance under all operating conditions. Equipment shall be of the best quality and most suitable for the function intended, and shall withstand all normal working conditions without deterioration. All equipment shall operate without undue vibration and noise. Equipment and accessories shall be of well-proven design and provide ease of inspection and maintenance.

The assembly shall be designed such that the components of the switchgear (circuit breakers, bus-bars, disconnect switches, grounding switches, CT's, PT's etc.) shall be in a grounded

metal enclosure. The front of the cubicle shall contain a low voltage compartment with access to controls, relays, motor drives and terminal blocks. The opening of the low voltage compartment shall not inhibit the operation of the switchgear.

The switchgear shall be designed such that normal service, inspection, maintenance, grounding of high voltage cables, locating of cable faults, voltage tests on connected cables and elimination of electrostatic charges can be carried out safely. The layout of equipment shall provide ready access for operation and maintenance of a section, while the adjacent sections are energized.

The stationary cubicle portion shall consist of a fabricated steel structure with a sheet steel cladding construction, and shall withstand repeatedly without distortion, forces caused by opening and closing of the circuit breaker. A continuous ground bus, minimum cross section 40mm x 10mm shall run along each cubicle for efficient earthing.

***The switchgear panels shall be designed such that they can easily be extended for future switchgear expansion as shown on Drawing #s NST-SK01 & NST-SK02. The future expansion is expected to include at least one (1) feeder breaker. Design and Construction shall be such as to allow extension at both ends of the switchgear.**

Busbars conductors and connectors shall be made of copper and rated ampacity shall be 1200Amp minimum and designed to withstand rated and short circuit currents. The surfaces of the conductors shall have a smooth finish to prevent any electrical discharges and be supplied with busbar covering/insulation at rated voltage. Disconnect and ground switch shall be silver plated to provide good conductivity.

The design of the joints between lengths of busbars, and from the busbar to the components shall permit easy dismantling for maintenance purposes.
Epoxy cast resin bushing-type insulators shall be provided at intersections between compartments.

The bushing - type insulator will support the live conductors.
The design of the bushing type insulator shall be such that it is possible to inspect, maintain each compartment individually without interfering with adjacent compartments.

TS.01.13 Design and Workmanship - Vacuum Circuit Breaker

Circuit breakers shall be vacuum type, designed to withstand impact and vibrations under rated and short circuit current conditions and also will withstand high switching duties. Vacuum bottles and circuit breakers should be manufactured and assembled by the switchgear supplier. The glass ceramic bottle shall be securely fused to the end fittings. The moving contact activating rod shall be carried on bellows protected from the sputtering of molten metal during switching operation by a shield. The breaker contacts shall be mounted in epoxy cast resin bushings.

Each circuit breaker shall be provided with a suitable mechanically operated indicating device, marked "OPEN" and "CLOSED". The indicating device shall be visible at all times from the front panel.

Circuit breaker operating mechanisms shall be motorized, and equipped with a spring charged indicating device. Circuit breaker mechanisms shall be trip free and designed for operation at 125 VDC, however meter shall be powered by the AC auxiliary panel provided.

A suitable form of control shall be incorporated in the design and the contacts shall be renewable and self-aligning to ensure full contact without undue maintenance.

Vents shall be provided in the top plate of each circuit breaker for the safe escape of gas**.** The vents shall have an efficient oil tap where applicable. Cast iron shall not be used for the circuit breaker or top plates.
The Circuit breakers shall be rated in accordance with the relevant ANSI standard, and compatible with the switchgear system ratings specified the switchgear specifications.

Circuit breakers, which require rapid auto-reclosing, shall have an interrupting capacity based on 0.5 sec-CO-15sec CO duty cycle

The circuit breakers shall be designed to accommodate the TRV peak which occur during the breaking of small inductive currents normally encountered in a high voltage system.

Vacuum circuit breakers shall not produce excessive over voltage as a result of current chopping. Special design is to be incorporated to reduce the effect of chopping to less than 5 Amps during any interruption action.

The circuit breaker operating mechanism shall be located in the low voltage compartment allowing access while the primary equipment is in service.

The operating mechanism shall be designed for high speed opening and closing of the circuit breaker under all operating conditions. All mechanical parts shall be adequately sized to ensure consistent operation of the mechanism when subjected to forces due to heavy short circuit currents. The maximum difference in opening time between the three phases shall not be more than 1/10 of one cycle of the rated frequency. It shall be possible to lubricate and service the moving parts of the mechanism without dismantling major components.

The operating mechanism for the circuit breaker shall be "trip free" type.

Closing operation shall be accomplished by means of a spring operated, stored energy-type mechanism, with electrical release. The mechanism shall be designed such that:

- it shall not be possible for the circuit breaker to close while the closing spring is being charged.

- it shall be necessary for the spring to be fully charged before it can be released to close the circuit breaker.
- it shall be possible to charge the spring with the circuit breaker in the closed position. If the spring is released during charging, the circuit breaker shall not open.

A visual, mechanical indicating device shall be provided to indicate the position of the spring. The position indicator shall say " SPRING CHARGED " when the mechanism is fully-charged, and ready to close the circuit breaker, and " SPRING FREE " when it is in any other condition.

Tripping Operation - of the circuit breaker shall be by means of a charged spring.
Each mechanism shall be provided with a shunt release, and the necessary auxiliary switches.
An operation counter shall be fitted to the mechanism, designed to total all "opening" operations of the interrupter.
Provisions for locking-out the manual tripping of the circuit breaker shall be made. It shall not be possible to defeat locking of the manual tripping.

Each operating mechanism shall be provided with the following control features:

- Remote electrical closing & tripping, with provisions for connection to a supervisory control system.
- Local electrical closing and trip with selection switch at the circuit breaker.
- Local manual closing and trip, preferably by push-buttons shrouded to prevent inadvertent operation.
- Local and remote electrical operation of the disconnect switch with automatic cutoff, when switch has reached the full open/closed position.
- Manual operation of isolator.

The operating mechanism shall automatically recharge the spring after the completion of a closing operation, with a control switch on each panel to cut off the DC supply to disconnect this facility.
An auxiliary switch as shall be, provided to give remote indication of "spring charged" status & trip/close status.

The vacuum circuit breaker control is to have automatic reclosing features and therefore shall have a selection of either fast or retarded operation for any or all trips in the operating sequence. The retarded operation should have a selection of time-current characteristics (including extremely-inverse) to facilitate coordination with other protective devices (including ANSI type "K" fuses and line reclosers).

The vacuum circuit breaker control should reclose automatically following either instantaneous or time-delayed tripping. The automatic reclosing scheme should have the following features:

(a) Option of 1, 2, 3 or 4 operations to lockout;

(b) Common operations-to-lockout settings for phase-fault and ground-fault tripping;

(c) Independent fast-operations settings for phase and ground tripping;

The recloser should reset automatically after a prescribed interval following a successful reclosure, or from the lockout position following a successful manual closure.

Phase overcurrent	Pickup range up to 1200Amps
Ground overcurrent	Pickup range up to 600Amps
Continuous Current	600Amps
Reclosing function	Multi-shot reclosing; 0 – 4 Reclosing operations; fast, time-delayed Operations selectable
Phase-trip curve	Definite-time & inverse-time curves
Ground-trip Curve	Definite-time & inverse-time Curves
Ground-trip blocking	Facility required
Control voltage	125 VDC
Metering	Power, voltage, current, maximum current Demand, power factor

TS.01.14 Selector

Selector switches shall be of the two-position type (i.e. on, off and Control Switches neutral position) with provision for locking in both the local and remote positions. Control switches shall be arranged to return automatically to the neutral position when the handle is released after being turned to either the "close" or "trip" position. Sequence devices shall not be fitted.

The contact for local operation and the contact for remote operation on the local/remote control switch for each vacuum breaker shall not be electrically link in any way. That is, each contact must be able to be supplied by independent sources

TS.01.15 Position Indicators

The following are the minimum position indicators that shall be provided on the switchgear for each circuit breaker.

a. "Spring charged"
b. "spring free"
c. Circuit breaker "CLOSED"
d. Circuit breaker "OPEN"
g. Trip circuit healthy

All above indicators shall be operated through mechanical means. Additional electrical indicator lamps (LED type) showing the status (e.g. circuit breaker " CLOSED " or " OPEN ") shall be provided on the front of the switch panel. Supply of these electrical indicators shall be fed from the battery charger.

Any two switching devices which are inter-locked together shall be secured by a double operation inhibit system in such a way that if an operation command is issued simultaneously to both devices or if they are both operated manually, their interlocks cannot block both the switches in an undefined, intermediate position. This means that while one device is being operated by hand or by a motorized mechanism, operation of the device interlocked with the former is blocked.

TS.01.16 Cable Termination & Lug (for copper cable)

The purchaser shall be responsible for the supply of termination kits. The type of termination kits to be supplied with each panel shall be of the pre-molded, plug-in-type and shall be designed for use on the various types of cables up to 750MCM Copper @ 25kV with appropriately sized 2-hole NEMA long barrel lugs.

The design of the complete cable termination (inclusive of its accessories) shall not- in any way deviate from the design objectives of air-insulated switchgear, including electrical ratings.

Each termination kit shall include three suitable lengths of tinned copper braids for the grounding of the cable ground shield. If the switchgear design requires a longer length of earth braid, it shall be the, responsibility of the supplier to ensure that the requirement is met. A copper lug shall be crimped at one end of each earth braid.

Each termination point to the switchgear main incoming busbar must be suitable to accommodate two (2) 750MCM XLPE copper cables per phase. Each termination point to the switchgear outgoing feeder busbar must be suitable to accommodate 1 – 750MCM XLPE copper cable per phase.

A suitable cover shall be provided and fitted securely at each plug-in cable termination receptacle entry. Their covers shall only be removed during cable termination.

The complete cable termination shall be enclosed in detachable metal enclosure to prevent unauthorized, access to termination compartment, and at the same to facilitate access for inspection/maintenance, if required.

The phase sequence (i.e. red, yellow and blue,) of the cable termination compartment shall be clearly indicated by color identification, preferably painted. The leads from plug-in termination kit for detecting the potential shall be suitably color coded for easy identification.

TS.01.17 Wiring

Control and relaying - Supplier shall furnish an integral control cabinet for the control of each, switchgear bay. The controls cabinet shall be located on the front of each switchgear bay. Each cabinet shall be completely fabricated, wired and assembled at the factory. Each cabinet shall be fully equipped and completely wired to the terminal blocks specified herein for all control and monitoring.
The cabinet doors shall be hinged on the left or right side, equipped with a three-point latching system, operated with a single handle. Operating handle shall have provisions for locking the door shut. Hinges for doors and swing panels shall not permit sagging due to weight of the door or panel. Each cabinet door shall be dust tight and gasketed NEMA 12 construction.

The controls for each circuit breaker shall contain the following equipment mounted on the front door of the cabinet:

- One Electro-switch Series 24 control switch for each circuit breaker
- One red indicating LED light and one green indicating LED light for each circuit breaker.
- Mimic diagram as described within the specification

- The controls for catch circuit breaker shall also contain the following equipment, located within the cabinet for applications, otherwise factor standard is acceptable:

    - Terminal blocks and terminations for each control wire connected to the circuit breaker, disconnect switches, and grounding switches. All terminal blocks shall

be GE, type ED-25 for external connections. A maximum of two wires per terminal shall be permitted.

- One 15 A, 130 V DC, two-pole fused knife switch for circuit breaker control, and one two-pole fused knife switch for disconnect and grounding switches.

- Shorting type terminal blocks shall be provided for each current transformer. The terminal block shall be GE type EB-27. A lead shall be installed and terminated for ratio of the multi-ratio current transformer.

- Terminal blocks and terminations for all wires associated with each interlocking scheme.

- Relays associated with electrical interlocking schemes. All relays shall have suitable guards or covers to prevent inadvertent operation due to accidental bumping.

- Terminal blocks for alarm circuits and miscellaneous remote control functions.

- Terminals blocks for all spare contacts of circuit breaker, disconnect, and grounding switches.

TS.01.18 Mimic Diagrams

Each control cabinet shall be equipped with a mimic diagram of sufficient size and color contrast to be plainly visible to an operator. Mimic diagrams shall show circuit breakers, maintenance disconnect switches, maintenance grounding switches, fast-acting grounding switches, and busbar connections,
The symbols on the mimic diagrams shall be in accordance with ANSI Y 14. 15 and ANSI Y 32. 2, otherwise factory standard is acceptable.

TS.01.19 Control Cabinet Design

All control cabinets shall be completely wired, tested, and ready for installation. The supplier shall provide the necessary cut outs and space to allow cable access.

Wiring shall conform to ANSI requirements depending on the actual installation
Ampacity and insulation shall meet the requirements of the control circuits.
Wiring shall be neatly arranged and secured to the panel or supported by suitable brackets as required. Splicing of wires is not acceptable.
All field wiring, except as noted, shall terminate on terminal blocks with numbering strips to identify each terminal or fuse block. All required jumpers shall be located opposite the

field terminations on the terminal block. Each terminal screw shall carry no more than two wires.

TS.01.20 Inspection and Testing

All equipment and materials supplied under this Contract shall be subject to inspection and testing by the Purchaser or his appointed representative. The Purchaser shall notify the Supplier in writing of the identity of any representatives retained for these purposes.

Satisfactory completion of such inspection and testing shall not prejudice the right of the Purchaser to reject the equipment if it fails to comply with the specifications or fulfill the function for which it was intended. In addition, the Purchasers' right to inspect, test and where necessary, reject the Goods after the Goods arrival in the Purchasers' country shall in no way be limited to or waived by reason of the Goods having been previously inspected, tested and passed to the Purchaser or the representatives prior to the Goods shipment from the country of origin.
The supplier shall conduct the tests and provide all necessary labor and equipment to carry out the tests.

TS.01.21 Factory Test

The Switchgear shall be completely assembled at the factory, and shall be subjected to all routine and design tests in accordance with ANSI Standards. If the Supplier can supply certified copies of design tests on identical equipment, the Purchaser may waive such tests entirely.

The Purchaser reserves the right to witness all tests and shall be notified at least three (3) weeks prior to the commencement of the tests.

a) The total cost of carrying out these tests, inclusive of the cost of travel, accommodation, airport & hotel transfers and all expenses for two (2) of the purchaser's engineers to witness such tests, shall be included in the quoted CIF cost for the 24KV metal-clad switchgear.

The Supplier shall furnish six certified copies of all test reports, curves and oscillograms within two (2) weeks after completion of any tests.
The switchgears and accessories furnished under this specification shall be fully tested and documented by certified test reports, in accordance with ANSI standards. The relay and control panel shall be tested in accordance with ANSI standards.

As a minimum the following test shall be conducted but not limited to:

- Power frequency withstand (high pot) of the insulation, in accordance with ANSI standards.
- Primary injection testing of all current transformers
- Commissioning of protective systems by load simulation
- Wiring insulation test at 2KV for 1 second
- Circuit breaker timing test

All test terminals shall be easily accessible without having to dismantle any part of the switchgear.

TS.01.22 Design Tests

The supplier shall submit with his tender a certificate of short circuit ratings or a complete short circuit test report (including oscillographic and photographic records etc.) to support the short circuit ratings assigned to the circuit breakers. The certificate shall include No Load Operations, Basic Short Circuit Test Duties and Short Time Current Tests as specified in the relevant ANSI standards.

A type test on one(1) switchgear panel shall be applied in accordance with the following duty: 0.5 sec-CO-15sec CO at not less than 100% of the rated symmetrical breaking current and not less than 100% of the rated making current

The switchgear panels shall be inspected for correctness of assembly and functioning of the various parts. It shall be tested for mechanical endurance of the circuit breaker (equipped with closing device) consisting of 1000 operations, followed by a test for temperature rise of the complete switching equipment. A temperature rise test shall also be conducted on the busbars to prove compliance with design requirements.

The switchgear panel shall be subjected to the impulse voltage tests. The test voltage shall be a full impulse voltage wave conforming with the requirements set out in the relevant ANSI standards.

A milivolt drop test or equivalent resistance test shall be conducted before and after the temperature test specified above on each phase and on each contact of the switchgear.

TS.01.23 Grounding

Grounding shall be provided to ground both the outgoing circuit and the busbars, but not both simultaneously, either by closing the circuit breaker or by separate grounding devices. The grounding function shall form part of the integral design of the equipment. Full details of the method of grounding shall be submitted by the manufacturer to the purchaser. It shall not be possible to select an integral grounding position or connect a portable grounding device unless the circuit breaker is in the open position. Locking facilities shall be provided

for grounding devices. The neutrals shall be either solidly grounded or through neutral grounding resisters. Both grounding links(isolators) are required to be interlocked with the incoming transformer feeder breakers. The breaker is to be prevented from being into service when the transformer neutral is 'floating'.

TS.01.24 Current Transformers

The current transformers shall comply with the requirements of this specification, and shall have short circuit ratings not less than that of the associated switchgear. They shall be capable of carrying the rated primary current for a period of one minute with the secondary winding open-circuited as specified in IEC 185, ANSI 37.13
Magnetization and core loss curves shall be provided upon the Purchasers request. Current transformers for protective gear shall have overcurrent and saturation factors not less than those corresponding to the design short circuit level of the system. The output of each current transformer shall not be less than that specified and the contractor shall ensure that the capacity of the currents provided is adequate for the operation of the associated protective devices and instruments. A label shall be provided on the secondary winding showing the different connection ratios and shall be shown on the associated schematic diagram. All secondary connections shall be made to short circuiting type terminal blocks. Metering class C.T shall be supplied for metering equipment and protection class C.T for protection equipment.

TS.01.25 Auxiliary Contacts

Circuit breakers, isolators and grounding switches shall be provided with suitably rated auxiliary contacts for protection, monitoring and control. In addition, two normally open and two normally closed contacts shall be provided. The connections of all auxiliary contacts shall be wired to a terminal board located in the stationary cubicle.

TS.01.26 Locking Provision

Locking shall be provided for the following:

- Panel door locking c/w facility to apply a padlock
- Circuit breaker mechanisms in the open position and any associated manual operating device in the neutral position.
- Access doors or gates to circuit enclosures.
- Circuit breakers control switches in the neutral position.
- Control position selector switches in all positions provided.

TS.01.27 Voltage Transformers

A Three phase connected resin type voltage transformer shall be provided for each side of the 24KV bus and they shall comply with IEC 186, ANSI C 37.13 and be of cast resin type and protection class.

TS.01.28 Spare Parts

The Supplier shall supply spare parts required for two- (2) years normal operation. All spare parts shall be identical to the original parts and shall be properly treated and packed for prolonged storage in the prevailing ambient conditions. Each part shall be clearly identified with its description and function on the outside of the package.
All spare parts shall be shipped with the main equipment and appropriately labeled as spares.

The Supplier shall provide a separate price for his recommended spare parts for the Switchgears. These spare parts shall include, but not be limited to the following.

- Complete sets of contacts
- Interrupting chambers
- Trip and close coils
- Control switches

TS.01.29 Tools

The Supplier shall supply tools required for assembly and/or maintenance of the switchgear. The Supplier shall provide a separate price for these tools.

TS.01.30 Training

The Supplier shall conduct training of the Purchaser's Personnel at the Purchaser's Plant, in assembly, start-up, operation, maintenance and/or repair of the switchgear.

The price charged by the Supplier to conduct the training shall be quoted separately.

TS.02 HIGH VOLTAGE SWITCHGEAR

TS.02.1 General

The 24-kV Metal-Clad Switchgear will be used for switching load and fault current at a power Substation.

All equipment furnished shall be suitable for operation under all possible load conditions.

TS.02.2 Standards and Codes

The Switchgear shall comply with the requirements of all applicable standards in the ANSI series and other relevant 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.02.3 Ratings

The Switchgears shall have the following ratings.

Nominal system voltage	24-kV
Connected system voltage	24kV – ref. Dwg No. NST-SK- 01 & NST-SK02
- Type of circuit breaker	**Air insulated Vacuum Circuit Breaker**
- **Nominal circuit Breaker Voltage**	**24kV**

- Rated maximum voltage	27kV
- Rated frequency	50 Hz
- Rated lightning impulse withstand level	125-kV
- Continuous current	Main 1200A, Feeder 600A
- Short circuit interrupting current	25-kA
- Momentary Rating	25 kA
- Maximum interrupting time	3 cycles
- Rated Opening Time	0.05sec.
- Rated control voltage	125 VDC
- Voltage range factor (k)	1.0

TS.02.4 Design and Performance

The Switchgears shall be of the indoor Air insulated type. The switchgear shall be supplied complete with operating mechanism and other accessories necessary for installation and safe operation c/w Arc protection features and appropriately sized surge arresters rated for the **24kV** substation line voltage.

The breaker shall be re-strike free, trip free in any position, suitable for remote and local electrical tripping and closing, or local emergency mechanical tripping and closing. Also suited for single pole tripping.
The Switchgear shall have proven ability for full out-of-phase switching of its rated interrupting capacity, and for handling short-line fault conditions with short-circuit capacity of all current-carrying parts equal to the Switchgear's rated interrupting capacity.

Supplier shall provide appropriate test data, curves and oscillograms to establish the ability of all equipment proposed to meet the conditions specified.

TS 02.5 Construction

The Switchgear should consist of a fixed part, the cubicle framework, and the circuit –breaker truck (air insulated). The basic framework and the supporting elements for integral equipment are to be constructed of press fabricated steel plates which secure a good dimensional accuracy and a good finish.

A Relay Cabinet shall be provided with each Switchgear, offering sufficient space for relays and instruments. The Relay Cabinet should have a front door for maintenance purposes.

The switchgear shall be provided with a rigidly framed, weatherproof relay compartment. All the necessary control equipment should be located in this cabinet. **The Switchgear should be constructed with removable blanking plates to allow cables entry at the bottom for both HV compartment and control compartment. HV cables will enter the bottom of the switchgear through ducts while control and auxiliary cables will enter**

the low voltage compartment of the switchgear via trench running below the switchgear.
A standard hinged metal door should provide rear access to incoming or outgoing cable and bus duct termination compartment.

The switchgear shall be provided with cable support. The switchgear shall be so design/constructed to allow safe lifting with forklift without damage to equipment.

The switchgear shall have external metal covers on all sides and earthed segregation to separate the panels from each other.

TS.02.6 Draw-out Position Indicator

The switchgear shall be provided with an indicator that points to an indicator on the compartment floor to clearly illustrate the draw-out position. This indication should be observable through the access panel or with the circuit breaker compartment door open.

TS.02.7 Grounding Contact

A Copper ground bus rigidly connected to the switchgear ground bus system, to be engaged by a grounding contact on the draw-out element to provide a maintained ground on the un-insulated portion of the draw-out element whenever its secondary and/or primary disconnects are mated.

TS.02.8 Terminal Blocks

Numbered eight point recessed screw type terminal blocks shall be provided. They should be mounted on stand-off removable panels to prevent enclosure penetration by device mounting hardware. Terminal block points designated for user connections have one side of the block reserved for this purpose. Terminal blocks must be able to accommodate 2.5mm^2 PVC insulated wire complete with equivalent size ring lug. (Yellow type)

TS.02.9 CT Shorting Terminal Blocks

A six-point shorting type terminal block shall be provided for each multi- ratio CT

TS.02.10 Insulation

Bus

All bus, including bends and odd configurations, must be fully insulated with a flame-retardant track –resistant epoxy compound.

Bus Joints

All bus joints, taps, and splices should covered with a low power factor; air filled vinyl secured in place with nylon hardware making these connections accessible with minimum effort.

Bus Support

All insulated bus risers to incoming or outgoing connections shall be supported by wet process porcelain.

TS.02.11 Closed Door Safety

An integrally mounted hinged access panels shall be incorporated into the switchgear compartment to enable racking the switchgear between connected, test and disconnected draw-out positions with the compartment door securely closed. Accordingly, in addition to the switchgears own grounded steel front barrier, a second grounded steel barrier shall be provided for further operator safety during the racking process. Mechanical interlocks should prevent racking unless the switchgear has been tripped and its primary contacts are in the fully open position.

TS.02.12 Hinged Panel

An instruction label shall be placed on the exterior of the hinged panel and it must clearly describe the operation of the racking release lever and the racking screw. These features must be readily accessible regardless of the switchgear draw-out position.

TS.02.13 Open Closed Indicator

The switchgear's open-closed indicator and operation counter must be easily observed through the hinged access panel.

TS.02.14 Interference Block

The switchgear shall be provided with interference blocks which permits correctly rated draw-out elements to be inserted and rejects insertion of incorrectly rated devices.

TS.02.15 Dual Guide Rails

Floor mounted full length dual guide rails shall be provided which assure positive alignment of draw-out element within the switchgear compartment to achieve the proper mating of all primary, secondary and grounding contacts.

TS.02.16 Truck operated Cell (TOC) Switch

The switchgear shall be equipped with an eight contact TOC switch which changes position as the switchgear is racked from test to connected or from connected to test draw-out positions. Normally open and normally closed contacts should be equally provided.

TS.02.17 Interlocks

Each switchgear should be provided with the following mechanical interlocks.
Interlocks to prevent:

1. A closed switch from being withdrawn from or inserted into the service (connected) position.
2. Switchgear from being inserted into the service position unless auxiliary circuit plugs are connected.
3. Closing of a switchgear unless it is in the service or test position.
4. Tripping by attempted isolation.
5. Closing of a feeder earthing switch unless the switchgear located in the removed or isolated position.
6. A switchgear from being inserted into the service position unless the feeder earthing switch is open.
7. A switchgear from being closed unless the closing spring is fully charged.

TS.02.18 Operating Mechanism

The circuit breaker operating mechanism shall be electrically, mechanically, hydraulically and/or pneumatically trip free, where applicable.

The Switchgear shall be equipped with trip and close coils suitable for local and remote operation from the station **125V** battery supply. It shall also incorporate a manually operated, independent, local tripping device for use in emergency or during maintenance. **The charging motor shall operate on the 1ϕ, 50HZ, 120V or 240V AC auxiliary power supply.**

The Switchgear shall have a facility for mechanical and electrical timing of the main interrupting contacts.

Each Switchgear pole shall be equipped with an enclosed type mechanical position indicator clearly visible from the ground.

TS.02.19 Current Transformers Ratings

All Switchgears shall be equipped with toroidal type multi-ratio current transformers mounted on line bushings. The quantity on each bushing and ratings of current transformers shall be as follows.

	24-kV
Ratio	1200:5 multiratio
Accuracy	C400
Quantity	as required

Changing CT ratios shall be easily and quickly performed without disturbing primary busses.

The Supplier shall provide ratio and phase angle correction factor curves excitation curves and resistance values of the secondary winding and connecting leads.

TS.02.20 Control and Auxiliary Power

The following power supplies will be provided in the power station and the equipment shall be suitable for operation from these supplies, as applicable:

- dc supply voltage 125 V

- ac supply 240/120 V, single-phase, 50 Hz

TS.02.21 Grounding Terminals

The switchgear should be provided with appropriate grounding (Ground Bars) as stated by the relevant ANSI standard.

TS.02.22 Wiring and Terminations

(a) Terminal Connectors

Clamp type terminal connectors suitable for 4/0 – 750 MCM copper cable shall be provided.

(b) Control Wiring

All control wiring shall be 600-V, flame- and oil-resistant, stranded copper, insulated wire. Wire sizes shall be appropriate for the function, but not be less than 2.5 mm^2 for control circuits. All power and control wiring shall be shielded from metering conductors.

All wiring connections shall be readily accessible and removable for test or other purposes. Wiring between terminals of the various devices shall be point to point. Splices or tee connections are not acceptable. Wire runs shall be neatly trunked inside the panels or in wiring troughs. All wires shall be identified at both ends with sleeve type markers.

Screw type terminal blocks with removable marking strips shall be provided for all circuits and 30% of the total number of spare terminals shall be supplied. Terminal blocks for the current transformer leads shall be of the short-circuiting type.

TS.02.23 Nameplates

Nameplates shall be of stainless steel and contain, but shall not be limited to

- name and address of manufacturer
- type and designation or serial number
- rated voltage
- rated frequency
- lightning impulse withstand voltage
- rated short-circuit breaking current
- year of manufacture
- control voltage range.
- current transformer ratios

All nameplate data shall be legible to an observer at ground level. All equipment shall be identified, and all nameplate wording shall be subject to Purchaser's approval.

TS.02.24 Low Voltage Compartment

The Switchgear shall be provided with a rigidly framed, weatherproof, sheet steel control cabinet, minimum 3 mm thick, mounted on the breaker supporting structure and positioned such that all controls may be operated from grade level. The cabinet shall be fitted with a hinged door complete with a 3-point latch with padlocking facility and shall be equipped with a detachable bottom entry conduit plate suitable for drilling in the field.

The control cabinet shall contain, but shall not be limited to:

- one set of control components, as required, to operate the 3-pole breakers

- one Switchgear trip-close control switch, rotary, panel-mounted type, enclosed contact mechanism with removable cover

- two indicating lamps, one red and one green, for Switchgear position indication

- one, two position test-normal control switch, rotary, panel mounted type, enclosed contact mechanism with removable cover

- one molded case 2-pole Switchgear for dc control supply with minimum of 10000 A interrupting capability

- operation counter

- one two-position selector switch marked `remote-local'

- one mechanically driven Switchgear auxiliary switch with necessary contacts for proper Switchgear operation, remote indication, supervisory control and indication, and eight spare contacts.

- overcurrent relay (50/51, 50/51N)
  SEL351S & SEL651R Part no. 0651R23DXBAAAD13X2D2XX
- one lamp with door activated switch
- one control cabinet dual element anti-condensation heater

- one approved mechanical emergency hand trip device with mechanically interlocked contacts to disconnect circuits from remote closing devices, easily accessible and clearly marked `emergency trip'

- copper ground bus, minimum 6 mm x 25 mm

- all necessary terminal blocks for all remote control and indication

- alarm devices with independent NO and NC contacts for remote indication of breaker off limit conditions, including low closing mechanism pressure, etc.

TS.02.25 Painting

All painted surfaces shall be shop painted with a compatible primer which shall have a dry film thickness of not less than 75 μm.

Two finish coats of ANSI 70 GREY shall be applied over the primer.

TS.02.26 Tools and Accessories

The Supplier shall furnish a complete set of any special tools or equipment that may be necessary or convenient for assembly or maintenance of the breaker. Manual operating levers and any other devices necessary for satisfactory operation shall also be furnished.

TS.02.27 Communication

The Communication protocol between the protective relays and the local SCADA facility shall be DNP3.0 over Multimode fiber optic cable.

PART 6: EXHIBITS

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Exhibit 1

FORM OF PERFORMANCE BOND

To: Jamaica Public Service Company Limited

WHEREAS _____hereinafter called "the Supplier" has undertaken to supply Equipment and Material for Spur Tree Distribution Transformer Project, hereinafter called "the Contract".

AND WHEREAS it has been stipulated by you in the said Contract that the Supplier shall furnish you with a Bank Guarantee by a recognized bank for the specified therein as security for compliance with the Supplier's performance obligations in accordance with the Contract. AND WHEREAS we have agreed to give the Supplier a Guarantee:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Supplier, up to a total of

(_____

_____

Dollars $_____)

and we undertake to pay you, upon your first written demand declaring the Supplier to be in default under the Contract and without cavil or argument, any sum or sums within the limits of

(_____

_____

Dollars $ _____)

as aforesaid, without your needing to prove or to show grounds or reasons for your demand of the sum specified therein.

This guarantee is valid until the _____ day of _____ 20 ____

Signature and Seal of the Guarantors

_____

_____

_____

Date: _____

Address: _____

_____

_____

Exhibit 2

FORM OF AGREEMENT

This Agreement made the _____ day of _____, 20_____ for the supply of Equipment and Material for Spur Tree Distribution Transformer Project. Bid Document **# 893146**

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 $ _____

The Supplier has furnished and the Purchaser accepts:
A Performance Bond that is:

Issued by the _____
In the amount of _____
Dated the _____

Having a Serial No.

_____

_____

With respect to the execution of the Works by the Supplier which bond shall operate according to its tenure.

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 7: BID FORM

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Bid for

THE JAMAICA PUBLIC SERVICE COMPANY LIMITED

NEW SPUR TREE SUBSTATION DISTRIBUTION TRANSFORMER PROJECT

FOR THE SUPPLY OF

EQUIPMENT AND MATERIALS

BID DOCUMENT # 893146

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 Equipment and Materials for Spur Tree Distribution Transformer Project in conformity with the Specification for and at the prices set out in the annexed Schedule of Prices.

The total amount of this Bid calculated according to the said Schedule of Prices and quoted in United States Dollars:

_____

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.