



THE CITY OF WINNIPEG

REQUEST FOR PROPOSAL

RFP NO. 341-2013

SUPPLY AND DELIVERY OF UNINTERRUPTIBLE POWER SUPPLIES

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 SUPPLY AND DELIVERY OF UNINTERRUPTIBLE POWER SUPPLIES

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, July 12, 2013.

B2.2 Proposals determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.

B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. ENQUIRIES

B3.1 All enquiries shall be directed to the Contract Administrator identified in D5.1.

B3.2 If the Bidder finds errors, discrepancies or omissions in the Request for Proposal, or is unsure of the meaning or intent of any provision therein, the Bidder shall promptly notify the Contract Administrator of the error, discrepancy or omission at least five (5) Business Days prior to the Submission Deadline.

B3.3 If the Bidder is unsure of the meaning or intent of any provision therein, the Bidder should request clarification as to the meaning or intent prior to the Submission Deadline.

B3.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Request for Proposal will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B3.5 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Request for Proposal will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B3.6 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B3.1 unless that response or interpretation is provided by the Contract Administrator in writing.

B4. CONFIDENTIALITY

B4.1 Information provided to a Bidder by the City or acquired by a Bidder by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator.

B4.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Request for Proposals to the media or any member of the public without the prior written authorization of the Contract Administrator.

B5. ADDENDA

B5.1 The Contract Administrator may, at any time prior to the Submission deadline, issue addenda correcting errors, discrepancies or omissions in the Request for Proposal, or clarifying the meaning or intent of any provision therein.

B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

- B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>
- B5.2.2 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 9 of Form A: Proposal. Failure to acknowledge receipt of an addendum may render a Proposal non-responsive.

B6. SUBSTITUTES

- B6.1 The Work is based on the materials, equipment, methods and products specified in the Request for Proposal.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least seven (7) Business Days prior to the Submission Deadline.
- B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the material, equipment, method or product as either an approved equal or alternative;
 - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
 - (c) identify any anticipated cost or time savings that may be associated with the substitute;
 - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the Contract;
 - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the Contract.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his/her sole discretion grant approval for the use of a substitute as an "approved equal" or as an "approved alternative", or may refuse to grant approval of the substitute.
- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he/she wishes to inform.
- B6.7 If the Contract Administrator approves a substitute as an "approved equal", any Bidder may use the approved equal in place of the specified item.
- B6.8 If the Contract Administrator approves a substitute as an "approved alternative", any Bidder bidding that approved alternative may base his/her Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B21.

- B6.9 No later claim by the Contractor for an addition to the price(s) because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.
- B6.10 Notwithstanding B6.2 to B6.9 and in accordance with B7.5, deviations inconsistent with the Request for Proposal document shall be evaluated in accordance with B21.2(a).

B7. PROPOSAL SUBMISSION

- B7.1 The Proposal shall consist of the following components:
- (a) Form A: Proposal;
 - (b) Form B: Prices;
 - (c) Form N: Price Adjustment Proposal Form;
 - (d) Form P: Proposal Information;
 - (e) Form R: References;
 - (f) Published Canadian Price List;
 - (g) Technical Information
- B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract administrator approving a substitute in accordance with B6.
- B7.3 All components of the Proposal shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Proposal.
- B7.3.1 Bidders should submit one (1) unbound original (marked "original") and six (6) bound copies.
- B7.3.2 Submit two CDs/DVDs of the complete proposal submission in searchable electronic PDF format.
- B7.3.3 In case of a discrepancy between the paper and electronic copies, the paper copy will be adhered to.
- B7.4 The Proposal Submission shall be submitted enclosed and sealed in an envelope clearly marked with the RFP number and the Bidder's name and address.
- B7.4.1 Samples or other components of the Proposal Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the RFP number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Proposal Submission.
- B7.5 Bidders are advised that inclusion of terms and conditions inconsistent with the Request for Proposal document, including the General Conditions, will be evaluated in accordance with B21.2(a).
- B7.6 Proposals submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B7.7 Proposals shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg MB R3B 1J1

B8. PROPOSAL

- B8.1 The Bidder shall complete Form A: Proposal, making all required entries.
- B8.2 Paragraph 2 of Form A: Proposal shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, his/her name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
 - (d) if the Bidder is carrying on business under a name other than his/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B8.2.1 If a Proposal is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.
- B8.3 In Paragraph 3 of Form A: Proposal, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Proposal.
- B8.4 Paragraph 11 of Form A: Proposal shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, it shall be signed by the Bidder;
 - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
 - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;
 - (d) if the Bidder is carrying on business under a name other than his/her own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- B8.4.1 The name and official capacity of all individuals signing Form A: Proposal should be printed below such signatures.
- B8.5 If a Proposal is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Proposal and the Contract, when awarded, shall be both joint and several.

B9. PRICES

- B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.
- B9.1.1 Prices on Form B: Prices shall include:
- (a) duty;
 - (b) freight and cartage;
 - (c) Provincial and Federal taxes [except the Goods and Services Tax (GST) and Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable] and all charges governmental or otherwise paid;
 - (d) profit and all compensation which shall be due to the Contractor for the Work and all risks and contingencies connected therewith.
- B9.1.2 Prices on Form B: Prices shall not include Environmental Handling Charges (EHC) or fees, which shall be extra where applicable.

- B9.2 The quantities listed on Form B: Prices are to be considered approximate only, and are based upon estimated purchases over a ten year period. The City will use said quantities for the purpose of comparing Proposals.
- B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.
- B9.4 Provide a price for a complete set of UPS dust filters for a UPS on Form B, Item 20. The price shall be consistent with the Published Canadian Price List (B13) and the discount indicated on Form B, Item 22.
- B9.5 Provide a price for a 15 KVA, 3-phase inverter module on Form B, Item 21. The price shall be consistent with Form B, Line Item 22.
- (a) In the event that a manufacturer offers the inverter as a single phase module, include three modules in the price.
- B9.6 Costs for all replacement parts shall be based upon the discount proposed on Form B, Item 22. The discount shall be a percentage that the Published Canadian Price List (B13) will be reduced by.
- (a) For example, a discount of 20% off of a list price of \$1000 shall be \$800.

B10. PRICE ADJUSTMENT PROPOSAL (FORM N)

- B10.1 The Bidder shall complete Form N: Price Adjustment Proposal, making all required entries.
- B10.2 The Price Adjustment Proposal is applicable to Form B Items 1 through 19.
- B10.3 The price in effect shall be based upon the date that the purchase order is submitted to the Contractor.
- B10.4 Fixed Price Period
- B10.4.1 The prices indicated in Form B will be fixed through to August 31, 2015.
- B10.4.2 No escalation of prices will be permitted during this period for any cause.
- B10.5 Price adjustments will occur annually with the first adjustment taking effect on September 1, 2015.
- B10.6 Complete Form N to indicate the method, and details of price determination after the expiration of the fixed prices.
- B10.7 Extension of Fixed Prices
- B10.7.1 If an extension of fixed prices is indicated on Form N, the Form B Prices shall be applicable until the indicated date on Form N. No price escalation will be permitted during this period.
- B10.8 Published List Prices
- B10.8.1 If the Price Adjustment is proposed to be based on Published List Prices, the following shall apply:
- (a) The price will be based upon the Bidder's indicated discount off the manufacturer's Published Canadian Price List, as referenced in B13.
- (b) The discount off list price indicated on Form N shall be a percentage of the list price that is subtracted from the list price to determine the actual price.
- (c) The prices indicated on Form B must be consistent with the Published Canadian Price List and the indicated discount on Form N. Significant discrepancies may, at the discretion of the City, result in the bid being deemed non-responsive.

- (d) The City reserves the right to use external sources to verify the validity of the Published Canadian Price List provided.
- (e) A new Published Canadian Price List shall be submitted to the Contract Administrator a minimum of 60 days prior to the new prices taking effect.
- (f) A new Published Canadian Price List will be accepted for price adjustment annually. The discount off list price indicated on Form N, shall not change. The price list must be in effect on September 1 of the year the prices take effect.
- (g) The new prices will come into effect on September 1, 2015 and on September 1 annually thereafter.
- (h) Where the Published Canadian Price List does not include field service rates, that correspond to Form B Item 19, the escalation of the field service rates will utilize the Manitoba Consumer Price Index (CPI).

B10.9 Percentage Price Increase

B10.9.1 If the Price Adjustment is proposed to be based on Percentage Price Increase, the following shall apply:

- (a) Contract prices for equipment and/or service will remain firm through the Fixed Price Period.
- (b) Price adjustments will take effect annually after the Fixed Price Period expires, with the first adjustment on the day after the Fixed Price Period.
- (c) Price adjustments will be made in accordance with the percentage change indicated on Form N.

B10.10 Indexed Price Adjustment

B10.10.1 If the Price Adjustment is proposed to be based on Indexed Price Adjustment, the following shall apply:

- (a) Contract prices for equipment and/or service will remain firm through the Fixed Price Period.
- (b) Price adjustments will take effect annually after the Fixed Price Period expires, with the first adjustment on the day after the Fixed Price Period.
- (c) Price adjustments will be made in accordance with the percentage change in the referenced index, as per Form N.
- (d) The price adjustment rate will be determined by comparing the percentage difference between the index in effect at the award of the Contract and the latest index data available 60 days prior to the new prices taking effect. The percentage difference between the two index values will be the price adjustment rate from the original fixed prices.

B10.11 Negotiation

B10.11.1 The Bidder may propose that the prices, after the expiration of Fixed Prices, be based upon negotiated prices, mutually agreed to at the time of Contract Extension, as per D2.

B10.11.2 The Negotiated prices are to be in effect for two years after the effective date.

B10.12 The Bidder's Price Adjustment proposal will be reflected in the calculation of the Evaluated Bid Price as per B22.

B10.13 Contract Extension Prices

B10.13.1 As indicated in D2, the City may negotiate a Contract extension with the Contractor. The prices for the Contract extension shall be based upon the Contractor's Price Adjustment Proposal on Form N.

B11. PROPOSAL INFORMATION (FORM P)

- B11.1 The Bidder shall complete Form P: Proposal Information, making all required entries. Where insufficient space is provided, attach additional pages as required.
- B11.2 Form P will be utilized as reference information for the evaluation of the proposal.

B12. REFERENCES (FORM R)

- B12.1 The Bidder shall complete Form R: References, making all required entries for three (3) client (end user) references for relationships where similar equipment and services are being provided. Each reference should consist of a company name, contact name, email address, phone number and a brief description of the equipment and services being provided.

B13. PUBLISHED CANADIAN PRICE LIST

- B13.1 The Bidder shall provide a manufacturer Published Canadian Price List.
- B13.2 The scope of the Published Canadian Price List shall include:
- (a) All standard replacement and maintenance parts applicable to the products addressed within this Bid Opportunity.
 - (b) If a Price Adjustment based on Published Prices is proposed on Form N, the Published Canadian Price List shall include all products addressed within this Bid Opportunity.
- B13.3 The Published Canadian Price List shall be a published standard list of prices, applicable to all sales by the manufacturer in Canada. Use of a price list that is specific to an individual or group of provinces, areas, industries, or customers is not acceptable. Provide evidence as requested to support the list prices submitted.
- B13.4 In the event that a Published Canadian Price List is not submitted by the Bidder, the Evaluated Bid Price will be adjusted as indicated in B22.

B14. TECHNICAL INFORMATION

- B14.1 The Bidder shall provide the following technical information:
- (a) Product datasheets for all the products proposed;
 - (b) Shop drawings for all the products proposed;
 - (c) System configuration indicated via single line diagrams;
 - (d) Detailed installation drawings including all terminal locations;
 - (e) Battery options, manufacturers, and ratings.
 - (f) Battery runtime curves for the UPS models proposed.
 - (g) Installation Manuals;
 - (h) Operation Manuals;
 - (i) Maintenance Manuals;
- B14.2 The complete provision of the above information is not a mandatory bid requirement, but lack of information, or incomplete information, will affect the bid evaluation as per B21.

B15. QUALIFICATION

- B15.1 The Bidder shall:
- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Bidder

does not carry on business in Manitoba, in the jurisdiction where the Bidder does carry on business; and

- (b) be financially capable of carrying out the terms of the Contract; and
- (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.
- (d) The manufacturer will have a minimum of fifteen (15) years experience in the design, manufacture, and testing of solid-state uninterruptible power supply systems.

B15.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/debar.stm>

B15.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) have successfully carried out work similar in nature, scope and value to the Work; and
- (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
- (c) have a written workplace safety and health program, if required, pursuant to The Workplace Safety and Health Act (Manitoba);

B15.4 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B15.5 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B16. OPENING OF PROPOSALS AND RELEASE OF INFORMATION

B16.1 Proposals will not be opened publicly.

B16.2 After award of Contract, the name(s) of the successful Bidder(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>

B16.3 To the extent permitted, the City shall treat all Proposal Submissions as confidential, however the Bidder is advised that any information contained in any Proposal may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

B17. IRREVOCABLE OFFER

B17.1 The Proposal(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 10 of Form A: Proposal.

B17.2 The acceptance by the City of any Proposal shall not release the Proposals of the other responsive Bidders and these Bidders shall be bound by their offers on such Work for the time period specified in Paragraph 10 of Form A: Proposal.

B18. WITHDRAWAL OF OFFERS

B18.1 A Bidder may withdraw his/her Proposal without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

- B18.1.1 Notwithstanding C21, the time and date of receipt of any notice withdrawing a Proposal shall be the time and date of receipt as determined by the Manager of Materials.
- B18.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Proposal or the Bidder's authorized representatives named in Paragraph 11 of Form A: Proposal, and only such person, has authority to give notice of withdrawal.
- B18.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Proposal until after the Submission Deadline has elapsed;
 - (b) open the Proposal to identify the contact person named in Paragraph 3 of Form A: Proposal and the Bidder's authorized representatives named in Paragraph 11 of Form A: Proposal; and
 - (c) if the notice has been given by any one of the persons specified in B18.1.3(b), declare the Proposal withdrawn.
- B18.2 A Bidder who withdraws his/her Proposal after the Submission Deadline but before his/her offer has been released or has lapsed as provided for in B17.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law.

B19. INTERVIEWS

- B19.1 The Contract Administrator may, in his/her sole discretion, interview Bidders during the evaluation process.

B20. NEGOTIATIONS

- B20.1 The City reserves the right to negotiate details of the Contract with any Bidder. Bidders are advised to present their best offer, not a starting point for negotiations in their Proposal Submission.
- B20.2 The City may negotiate with the Bidders submitting, in the City's opinion, the most advantageous Proposals. The City may enter into negotiations with one or more Bidders without being obligated to offer the same opportunity to any other Bidders. Negotiations may be concurrent and will involve each Bidder individually. The City shall incur no liability to any Bidder as a result of such negotiations.
- B20.3 If, in the course of negotiations pursuant to B20.2 or otherwise, the Bidder amends or modifies a Proposal after the Submission Deadline, the City may consider the amended Proposal as an alternative to the Proposal already submitted without releasing the Bidder from the Proposal as originally submitted.

B21. EVALUATION OF PROPOSALS

- B21.1 The Proposal shall consist of the following components:
- (a) Form A: Proposal;
 - (b) Form B: Prices;
 - (c) Form N: Price Adjustment Proposal Form;
 - (d) Form P: Proposal Information;
 - (e) Form R: References;
 - (f) Published Canadian Price List;
 - (g) Technical Information

- B21.2 Award of the Contract shall be based on the following evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Request for Proposal, or acceptable deviation therefrom (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B10 (pass/fail);
 - (c) Evaluated Bid Price, calculated as per B22 40%
 - (d) Technical Features and Capabilities 30%
 - (e) Configuration and Application Flexibility 10%
 - (f) Quality of Documentation 7%
 - (g) Service / Support 10%
 - (h) Service / Support Agreement 3%
 - (i) economic analysis of any approved alternative pursuant to B6;
- B21.3 Further to B21.2(a), the Award Authority may reject a Proposal as being non-responsive if the Proposal Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Proposal, or waive technical requirements or minor informalities or irregularities if the interests of the City so require.
- B21.4 Further to B21.2(b), the Award Authority shall reject any Proposal submitted by a Bidder who does not demonstrate, in his/her Proposal, in other information required to be submitted, during interviews or in the course of reference checks, that he/she is responsible and qualified.
- B21.5 Further to B21.2(d), the Technical Features and Capabilities will be evaluated utilizing the following as sources:
- (a) Form B – Whether non-mandatory components are proposed.
 - (b) Form P;
 - (c) Technical Information provided as per B14, including the completeness and quality of information.
 - (d) Existing documentation that may be publicly available regarding the products proposed.
 - (e) Information available on the Manufacturer's web site.
- B21.6 Further to B21.2(e), The Configuration and Application Flexibility will be evaluated utilizing the following as sources:
- (a) Form B – Whether non-mandatory components are proposed.
 - (b) Form P;
 - (c) Technical Information provided as per B14.
 - (d) Existing documentation that may be publicly available regarding the products proposed.
 - (e) Information available on the Manufacturer's web site.
- B21.6.1 The evaluation of the specific technical attributes will take into account the preferences indicated in Part E.
- B21.7 Further to B21.2(f), the Quality of Documentation will be evaluated utilizing the following as sources:
- (a) Form P;
 - (b) Technical Information provided as per B14, including the completeness and quality of information.
 - (c) Existing documentation that may be publicly available regarding the products proposed.
 - (d) Information available on the Manufacturer's web site.

- B21.8 Further to B21.2(g), the Service / Support will be evaluated based upon the proposal information submitted in Form P, considering the service and support requirements of the City.
- B21.9 Further to B21.2(h), The Service / Support Agreement will be evaluated considering the detailed services to be provided, any conditions proposed, and the applicability of the proposal to the City's needs.
- (a) In the event that a Service and Support Agreement is not proposed, a score of 0 will be applied to the corresponding section of the evaluation.
 - (b) In the event that terms and/or conditions are applied to the offer for the Service and Support Agreement, that are not consistent with the requirements of this Bid Opportunity, the Proposal will be evaluated as if no Service / Support Agreement were proposed.
- B21.10 This Contract will be awarded as a whole.
- B21.10.1 Notwithstanding B21.10, the City shall not be obligated to award the Annual Service and Support Agreement to the Bidder
- B21.11 If, in the sole opinion of the City, a Proposal does not achieve a pass rating for B21.2(a) and B21.2(b), the Proposal will be determined to be non-responsive and will not be further evaluated.
- B21.12 References included in Form R, or any other internal or external source, may be used in order to verify and corroborate proposal information submitted. By submitting a proposal the Bidder consents to the City being able to contact these references and also consents to the City contacting any other organization for the purposes of evaluating the Bidders proposal.

B22. EVALUATED BID PRICE

- B22.1 Further to B21.2(c), the subtotal bid price will be calculated based upon Form B as the sum of the following (reference B22.3.1 for specific cases):
- (a) The sum of the estimated quantities multiplied by the unit prices for Items 1 through 21.
 - (b) The Annual Maintenance Price, calculated as follows:
 - (i) The sum of the estimated quantities multiplied by the Annual Service and Support Agreement Price for Items 1 through 18, plus
 - (ii) Item 23 - The Service and Support Agreement Annual Base Costs.
- B22.2 The Evaluated Bid Price will be calculated as the sum of the Estimated Cost Per Year multiplied by the estimated total escalation for the year.
- (a) The Estimated Cost Per Year will be calculated as follows:
 - (i) Year 1: 5% of the subtotal bid price;
 - (ii) Year 2: 5% of the subtotal bid price;
 - (iii) Year 3: 5% of the subtotal bid price, plus escalation;
 - (iv) Year 4: 15% of the subtotal bid price, plus escalation;
 - (v) Year 5: 15% of the subtotal bid price, plus escalation;
 - (vi) Year 6: 5% of the subtotal bid price, plus escalation;
 - (vii) Year 7: 10% of the subtotal bid price, plus escalation;
 - (viii) Year 8: 15% of the subtotal bid price, plus escalation;
 - (ix) Year 9: 15% of the subtotal bid price, plus escalation;
 - (x) Year 10: 10% of the subtotal bid price, plus escalation.
- B22.3 The estimated total escalation for each year will be based upon the Bidder's Price Adjustment Proposal in Form N.
- B22.3.1 If the Price Adjustment is proposed to be based on an extension of fixed prices, an escalation of 0% will apply for the years indicated on Form N.

- B22.3.2 If the Price Adjustment is proposed to be based on Published List Prices, the following shall apply:
- (a) An annual escalation value of 2.7% will be assumed for the calculation of the Evaluated Bid Price, provided that a Published Canadian Price List is included with the bid and found to be consistent with Form B and the discount proposed in Form N.
 - (b) In the event that a standard list price is not provided, or the standard list prices are not consistent with Form B and the discount proposed in Form N, an annual escalation value of 3.5% will be assumed.
 - (c) Notwithstanding B22.3 (b), in the event that the standard list price has, in the opinion of the Contract Administrators, major inconsistencies with Form B and the discount proposed in Form N, the Contract Administrator may deem the bid non-responsive.
- B22.3.3 If the Price Adjustment is proposed to be based on Percentage Price Increase, the following shall apply:
- (a) The calculation of the Evaluated Bid Price will utilize the indicated escalation values indicated on Form N.
 - (b) In the event that a percentage price increase is not proposed for certain years, the annual escalation assumed will be the maximum price increase for the respective year from all other responsive bids, or 4%, whichever is greater.
- B22.3.4 If the Price Adjustment is proposed to be based on Indexed Price Adjustment, the following shall apply:
- (a) An annual escalation rate of 2.5% or the average change of the last five years of the index, whichever is greater, will be assumed for the calculation of the Evaluated Bid Price.
- B22.3.5 If the Price Adjustment is proposed to be based on Negotiation, the following shall apply:
- (a) An annual escalation value of 4%, or 1.3 times the average price increase for the respective year from all other responsive bids, whichever is greater, will be assumed for the calculation of the Evaluated Bid Price.
- B22.4 The following items are not mandatory. In the event that a price is not provided, the item cost for the corresponding item will be calculated as follows, for the purpose of calculating the Evaluated Bid Price:
- B22.4.1 Item 4 – 30 KVA UPS
- (a) If not proposed, the item unit price will be calculated as follows:
 - (i) Two (2) times the unit price for a 15 KVA UPS, plus
 - (ii) \$20,000 to account for additional costs to the City associated with the design, installation, and operation of two UPS units.
- B22.4.2 Item 8 – External Maintenance Bypass Switch – 30 KVA (Mandatory if 30 KVA UPS proposed)
- (a) If not proposed, the item unit price will be calculated as follows:
 - (i) 140% of the average unit price for Items 5, 6, and 7.
- B22.4.3 Item 9 – Maintenance Bypass Cabinet With Transformer – 10 KVA
- (a) If not proposed, the item unit price will be calculated as follows:
 - (i) The unit price for Item 5, plus
 - (ii) \$5,000 to account for additional costs to the City associated with the design, installation, and operation of a separate transformer unit.
- B22.4.4 Item 10 – Maintenance Bypass Cabinet With Transformer – 15 KVA
- (a) If not proposed, the item unit price will be calculated as follows:
 - (i) The unit price for Item 6, plus

- (ii) \$6,000 to account for additional costs to the City associated with the design, installation, and operation of a separate transformer unit.
- B22.4.5 Item 11 – Maintenance Bypass Cabinet With Transformer – 20 KVA
 - (a) If not proposed, the item unit price will be calculated as follows:
 - (i) The unit price for Item 7, plus
 - (ii) \$7,000 account for additional costs to the City associated with the design, installation, and operation of a separate transformer unit.
- B22.4.6 Item 12 – Maintenance Bypass Cabinet With Transformer – 30 KVA
 - (a) If not proposed, the item unit price will be calculated as follows:
 - (i) The unit price for Item 8, plus
 - (ii) \$8,000 account for additional costs to the City associated with the design, installation, and operation of a separate transformer unit.
 - (b) Alternately, if a 30 KVA UPS is not proposed, the item unit price will be calculated as follows:
 - (i) 140% of the average unit price for Items 9, 10, and 11.
- B22.4.7 Item 17 – SNMP Module
 - (a) If not proposed, the item unit price will be calculated as follows:
 - (i) \$2,000 per module, which represents the cost to the City of obtaining the data via alternate means.
- B22.4.8 Item 18 - Modbus TCP Module
 - (a) If not proposed, the item unit price will be calculated as follows:
 - (i) \$3,000 per module, which represents the cost to the City of obtaining the data via alternate means.
- B22.4.9 Annual Service and Support Agreement Price
 - (a) If not proposed, the Annual Service and Support Agreement Price will be calculated as follows for the purpose of Bid Evaluation:
 - (i) The average of the Annual Service and Support Agreement Price of the other responsive Bids.

B23. AWARD OF CONTRACT

- B23.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B23.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Proposals are determined to be responsive.
 - B23.2.1 Without limiting the generality of B23.2, the City will have no obligation to award a Contract where:
 - (a) the prices exceed the available City funds for the Work;
 - (b) the prices are materially in excess of the prices received for similar work in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
 - (d) only one Proposal is received; or
 - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B23.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the most advantageous offer, in accordance with B21.

B23.4 Following the award of Contract, a Bidder will be provided with information related to the evaluation of his/her Proposal upon written request to the Bid Administrator.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for the Supply of Goods* (Revision 2008 05 26) are applicable to the work of the Contract.
- C0.1.1 The *General Conditions for the Supply of Goods* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/gen_cond.stm
- C0.2 A reference in the proposal to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Supply of Goods*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

D1.1 In addition to the *General Conditions for the Supply of Goods*, these Supplemental Conditions are applicable to the Work of the Contract.

D2. INTENT

D2.1 The intent of this Request for Proposal is to select a preferred Uninterruptible Power Supply (UPS) manufacturer for three-phase UPS units required for the City's Sewage Treatment Program and set the conditions for supply over a ten-year period. The City may, at its discretion, procure UPS units for other facilities under this Contract.

D3. SCOPE OF WORK

D3.1 The Work to be done under the Contract shall consist of supply and delivery of Uninterruptible Power Supply units for the period from September 1, 2013 until August 31, 2015, with the option of four (4) mutually agreed upon two (2) year extensions.

D3.1.1 The City may negotiate the extension option with the Contractor within sixty (60) Calendar Days prior to the expiry date of the Contract. The City shall incur no liability to the Contractor as a result of such negotiations.

D3.1.2 Changes resulting from such negotiations shall become effective on September 1 of the respective year. Changes to the Contract shall not be implemented by the Contractor without written approval by the Contract Administrator.

D3.1.3 The prices for Contract extension shall be consistent with the Price Proposal indicated in Form N and B10.

D3.2 The Work shall be done on an "as required" basis during the term of the Contract.

D3.2.1 The type and quantity of Work to be performed under this Contract shall be as authorized from time to time by the Contract Administrator and/or Users via a purchase order.

D3.2.2 Subject to C7, the City shall have no obligation under the Contract to purchase any quantity of any item in excess of its actual requirements.

D4. DEFINITIONS

D4.1 When used in this Request for Proposal:

- (a) "**UPS**" means Uninterruptible Power Supply;
- (b) "**SNMP**" means Simple Network Management Protocol.
- (c) "**Successful Commissioning**" means:
 - (i) If UPS start-up services apply (as per E6.27) the date of successful commissioning shall be that upon which the UPS start-up services are successfully completed.
 - (ii) If UPS start-up services don't apply, the date of successful commissioning shall be that upon which the City completes commissioning of the equipment.

D5. CONTRACT ADMINISTRATOR

D5.1 The Contract Administrator is:
Tim Church
Electrical Engineer

SNC-Lavalin Inc.
148 Nature Park Way, Winnipeg, MB, R3P 0X7
tim.church@snclavalin.com

Telephone No. (204) 786-8080
Facsimile No. (204) 786-7934

D5.2 Bids Submissions must be submitted to the address in B7.7.

D6. RETURN OF GOODS

- D6.1 Further to C9.8 to C9.13, Goods incorrectly supplied as a result of the Contractors error shall be returned at no cost to the City.
- D6.2 Further to C9.8 to C9.13, Goods incorrectly supplied as a result of the City's error will be returned at the City's cost.
- D6.3 Further to C9.8 to C9.13, the Contractor will be responsible for costs and any associated equipment manufacturer correspondence for any and all equipment delivered in an unusable state.

D7. CHANGES IN THE WORK

- D7.1 Further to C7, the City anticipates that during the term of the Contract there will be changes including but not limited to:
- (a) Products line / model availability;
 - (b) Products required to meet specific applications.
- D7.2 Changes shall be addressed in accordance with C7 of the General Conditions.
- D7.3 The Contractor shall advise the City of planned obsolescence of a product or product line a minimum of one year prior to obsolescence.
- (a) The Contractor shall provide detailed technical literature on the proposed replacement. The Contract Administrator will determine the technical acceptability of the proposed replacement product.
- D7.4 Where the Contractor is unable to provide a replacement product to meet changes in the City's requirements, the City shall have the right to remove the product from the Contract.
- D7.5 The price of the proposed replacement product must have pricing that is comparable and consistent with the pricing originally proposed in the Contractor's submission.
- D7.6 Where the price of the replacement product is deemed by the City to not be comparable to the original product proposed, the City shall have the right to remove the product from the Contract.
- D7.7 Where the proposed replacement product(s) and/or pricing no longer meets the overall intent of this Request for Proposal, the City reserves the right to cancel the Contract.

D8. RISK AND RESPONSIBILITY

- D8.1 Notwithstanding C8.1 to 8.3, the material delivered by the Contractor shall remain at the risk and the responsibility of the Contractor from the commencement of the Work until:
- (a) Delivery to the City, subject to the delivery being appropriately received by an approved representative of the City.

D8.2 Further to D8.1, material removed from the Site or the Work by the Contractor shall once again become the full risk and the responsibility of the Contractor until re-delivered to the City.

D9. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE

D9.1 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City and shall not be appropriated for the Contractors own use, or for the use of any third party.

D9.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.

D9.3 The following shall be confidential and shall not be disclosed by the Contractor to the media or any member of the public without the prior written authorization of the Contract Administrator;

- (a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;
- (b) the Contract, all deliverables produced or developed; and
- (c) any statement of fact or opinion regarding any aspect of the Contract.

D9.4 A Contractor who violates any provision of D9 may be determined to be in breach of Contract.

D10. NOTICES

D10.1 Notwithstanding C21.3, all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following facsimile number:

The City of Winnipeg
Chief Financial Officer

Facsimile No.: 204 949-1174

SUBMISSIONS

D11. AUTHORITY TO CARRY ON BUSINESS

D11.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

D12. MATERIAL SAFETY DATA SHEETS

D12.1 The Contractor shall provide the Contract Administrator with one (1) copy of Material Safety Data Sheets (MSDS's) for each product to be supplied under the Contract at least two (2) Business Days prior to the commencement of Work but in no event later than the date specified in C4 for the return of the executed Contract.

D12.2 Throughout the term of the Contract, the Contractor shall provide the Contract Administrator with revisions or updates of the MSDS's as soon as may be reasonably possible.

SCHEDULE OF WORK

D13. COMMENCEMENT

D13.1 The Contractor shall not commence any Work until he/she is in receipt of a notice of award from the City authorizing the commencement of the Work.

- D13.2 The Contractor shall not commence any Work until:
- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D11;
 - (ii) evidence of the workers compensation coverage specified in C6.16;
 - (iii) the Material Safety Data Sheets specified in D12;
 - (b) the Contractor has attended a meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a meeting.

D14. DELIVERY

- D14.1 Goods shall be delivered within the timeframe indicated by the Contractor on Form P, f.o.b. destination, freight prepaid to the destination indicated on the purchase order.
- (a) All destinations will be within the limits of the City of Winnipeg.
 - (b) All deliveries shall be within the maximum timeframe indicated on Form P or 12 weeks, whichever is less.
 - (c) The average of all deliveries shall be within the average timeframe indicated on Form P.
- D14.2 The Contractor shall confirm each delivery with the Contract Administrator or his/her designate, at least two (2) Business Days before delivery.
- D14.3 Goods shall be delivered between 8:00 a.m. and 3:30 p.m. on Business Days.
- D14.4 The Contractor shall off-load goods as directed at the delivery location.
- (a) Assume that truck unloading facilities are not available at the destination.

D15. RECORDS

- D15.1 The Contractor shall keep detailed records of the goods supplied under the Contract.
- D15.2 The Contractor shall record, as a minimum, for each item listed on Form B: Prices:
- (a) user name(s) and addresses;
 - (b) order date(s);
 - (c) delivery date(s); and
 - (d) description and quantity of goods supplied.
- D15.3 The Contractor shall provide the Contract Administrator with a copy of the records for each year within fifteen (15) Calendar Days of a request of the Contract Administrator.

D16. TOTAL PERFORMANCE

- D16.1 Notwithstanding C1.1 and C5.10, Total Performance shall not be applicable to the Work.

MEASUREMENT AND PAYMENT

D17. INVOICES

- D17.1 Further to C10, the Contractor shall submit an invoice for each order delivered to:

The City of Winnipeg
Corporate Finance - Accounts Payable
4th Floor, Administration Building, 510 Main Street
Winnipeg MB R3B 1B9

Facsimile No.: 204 949-0864
Email: CityWpgAP@winnipeg.ca

- D17.2 Invoices must clearly indicate, as a minimum:
- (a) the City's purchase order number;
 - (b) date of delivery;
 - (c) delivery address;
 - (d) type and quantity of goods delivered;
 - (e) the amount payable with GST, MRST and any applicable environmental handling charges/fees identified and shown as separate amounts; and
 - (f) the Contractor's GST registration number.
- D17.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.
- D17.4 Bid Submissions must be submitted to the address in B7.7.

D18. PAYMENT

- D18.1 Further to C10, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.
- D18.2 Further to C10.1.1, the payment to the Contractor shall include the escalation indicated in the Bidder's price proposal, or as agreed to via negotiation.

D19. PAYMENT SCHEDULE

- D19.1 Further to C10, payment shall be in accordance with the following payment schedule:
- (a) 90% on delivery and the City's acceptance of the goods based upon a visual inspection.
 - (b) 10% on the Successful Commissioning of the UPS and associated equipment and provision of all required documentation.
- D19.2 In the event that the City does not initiate the commissioning of the goods within six (6) months of delivery, the payment for the remaining 10% shall be made six (6) months after delivery.
- D19.2.1 The payment for Successful Commissioning will not be processed where the delay in commissioning is due to the Contractor.

WARRANTY

D20. WARRANTY

- D20.1 Notwithstanding C11, the warranty period shall begin on the date of Successful Commissioning and shall expire one (1) years thereafter unless extended pursuant to C11.3 or the Contractor's indicated warranty period as indicated in Form N, whichever expires last.
- D20.2 In the event that the City does not initiate the commissioning of the goods within six (6) months of delivery, the warranty period shall begin on the date six (6) months from the date of delivery.
- D20.2.1 The warranty period shall not begin where the delay in commissioning is due to the Contractor.
- D20.3 The battery manufacturer's standard warranty shall be passed through to the City.
- D20.4 The warranty shall include all materials and on-site labour for all equipment supplied under this Contract.

EVENTS OF DEFAULT

D21. EVENTS OF DEFAULT

D21.1 Further to C16, the Contract Administrator may, at its discretion, consider the following to be events of default:

- (a) One or more late deliveries;
- (b) Failure to provide UPS start-up services in a timely manner when requested;
- (c) Failure to provide an adequate level of service;
- (d) Failure of the UPS units to meet the specified requirements;
- (e) Failure to provide warranty service;
- (f) Or any other reason deemed by the Contract Administrator to significantly impair the ability of the products to perform their required function.

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

E1.1 These Specifications shall apply to the Work.

E2. NON-MANDATORY ITEMS

E2.1 All non-mandatory requirements will be evaluated as per B21 and B22.4.

E3. GOODS

E3.1 Item No. 1 – 10 kVA UPS, as per E6.

E3.2 Item No. 2 – 15 kVA UPS, as per E6.

E3.3 Item No. 3 – 20 kVA UPS, as per E6.

E3.4 Item No. 4 – 30 kVA UPS, as per E6.

E3.5 Item No. 5 – External Maintenance Bypass Switch – 10 kVA, as per E7.

E3.6 Item No. 6 – External Maintenance Bypass Switch – 15 kVA, as per E7.

E3.7 Item No. 7 – External Maintenance Bypass Switch – 20 kVA, as per E7.

E3.8 Item No. 8 – External Maintenance Bypass Switch – 30 kVA, as per E7.

E3.9 Item No. 9 – Maintenance Bypass Cabinet - 10 KVA, as per E7.6.

E3.10 Item No. 10 – Maintenance Bypass Cabinet - 15 KVA, as per E7.6.

E3.11 Item No. 11 – Maintenance Bypass Cabinet - 20 KVA, as per E7.6.

E3.12 Item No. 12 – Maintenance Bypass Cabinet - 30 KVA, as per E7.6.

E3.13 Item No. 13 – External Battery Cabinet – Type 1, as per E9.

E3.14 Item No. 14 – External Battery Cabinet – Type 2, as per E9.

E3.15 Item No. 15 – External Battery Cabinet – Type 3, as per E9.

E3.16 Item No. 16 – Relay Module, as per E9.7.

E3.17 Item No. 17 – SNMP Module, as per E10.7.

E3.18 Item No. 18 – Modbus TCP Module, as per E11.7E11.6.

E3.19 Item No. 19 – Field Service, as per E12.7.

E3.20 Item No. 21 – Spare Parts as per E14.

E3.21 Item No. 20 – Service and Support Agreement – Annual Base Costs, as per E15

E4. MANUFACTURER MODELS

E4.1 Where multiple model series are proposed, provide a separate bid for each model series.

E5. SUBMITTALS

- E5.1 Upon receipt of each purchase order, provide a complete set of submittals and shop drawings for review prior to delivery.
- E5.2 Submittals to include:
- (a) System configuration with single-line diagrams.
 - (b) Functional relationship of equipment including weights, dimensions, and heat dissipation.
 - (c) Descriptions of equipment to be furnished.
 - (d) Size and weight of shipping units.
 - (e) Detailed installation drawings including all terminal locations.
 - (f) Operations and maintenance manuals
 - (g) Battery runtime curves for internal and external batteries.

E6. UNINTERRUPTIBLE POWER SUPPLIES

- E6.1 Conformance with CSA C22.2, No. 107.3 Uninterruptible Power Systems.
- E6.2 CSA/ cUL approved.
- E6.3 Technology:
- (a) Online, double-conversion, split-phase topology with static bypass switch.
 - (b) Frequency independent operation.
- E6.4 Design Requirements - UPS Module
- (a) Voltage. Input/output voltage specifications of the UPS shall be:
 - (i) Rectifier Input: 208 volts, three-phase.
 - (ii) Output: 208 volts, three-phase, 4-wire-plus-ground.
 - (b) Units having a range of 10 kVA to 30 kVA at 0.8 lagging power factor.
 - (c) Standard sizes are based upon 10, 15, 20, and 30 KVA units. Where a manufacturer's standard offerings are based upon other size sizes, the proposed products are to be based upon the manufacturer's next largest size.
 - (d) All UPS sizes are to be from a single manufacture and model series. The UPS units for each size must have identical design features other than unit ratings.
 - (e) Bidders must propose products that are based on a nominal 10, 15, and 20 KVA size as a mandatory requirement.
 - (f) The requirement to propose a 30 KVA UPS unit is not mandatory.
 - (g) Cable Entry: Top and Bottom
- E6.5 Internal Batteries:
- E6.5.1 Design Requirements
- (a) Battery Cells: Sealed, lead-acid, valve-regulated.
 - (b) Design Life: 10 years at 25°C
 - (c) Recharge Time: to 95% capacity within ten (10) times the discharge time.
 - (d) Provide means (circuit breaker, connector or switch) to isolate the battery from the UPS.
- E6.5.2 Preferred Minimum Internal Battery Runtime:
- (a) 10 KVA UPS Units:
 - (i) 41 minutes at full load.

- (b) 15 KVA UPS Units:
 - (i) 26 minutes at full load.
- (c) 20 KVA UPS Units:
 - (i) 18 minutes at full load.
- (d) 30 KVA UPS Units:
 - (i) 10 minutes at full load.
- (e) Bid Evaluation: Preference will be given to units that meet and exceed the desired runtime.
- (b) All UPS units must have the capability for expansion via external battery modules / cabinets.

E6.6 Modes of Operation

- (a) The UPS shall be designed to operate as an on-line, double-conversion, reverse-transfer system in the following modes:
 - (i) Normal - The critical AC load is continuously supplied by the UPS inverter. The rectifier/charger derives power from a utility AC source and supplies DC power to the inverter while simultaneously float-charging the reserve battery.
 - (ii) Emergency - Upon failure of utility AC power, the critical AC load is supplied by the inverter, which, without any switching, obtains power from the battery. There shall be no interruption in power to the critical load upon failure or restoration of the utility AC source.
 - (iii) Recharge - Upon restoration of utility AC power, after a utility AC power outage, the rectifier/charger shall automatically restart, walk-in, and gradually assume the inverter and battery recharge loads.
 - (iv) Bypass - If the UPS must be taken out of service for maintenance or repair, or should the inverter overload capacity be exceeded, the static transfer switch shall perform a reverse transfer of the load from the inverter to the bypass source with no interruption in power to the critical AC load.

E6.7 Performance Requirements

E6.7.1 AC Input Rectifier to UPS

- (a) Voltage Range: +10%, -20% of nominal voltage.
- (b) Frequency Tolerance: $\pm 5\%$ of nominal frequency.
- (c) Displacement Power Factor: Minimum 0.95 lagging at nominal input voltage and full rated UPS output load.
- (d) Inrush Current: Maximum 800% of full load current.
- (e) Current Distortion: 4% reflected THD maximum at full load.
- (f) Current Limit: 125% of nominal AC input current maximum.
- (g) Surge Protection: Sustains input surges without damage per criteria listed in IEC 1000-4-5.

E6.7.2 AC Output, UPS Inverter

- (a) Voltage Regulation:
 - (i) $\pm 1\%$ three-phase RMS average for a balanced three-phase load for the combined variation effects of input voltage, connected load, battery voltage, ambient temperature, and load power factor.
 - (ii) $\pm 2\%$ three-phase RMS average for a 100% unbalanced load for the combined variation effects of input voltage, connected load, battery voltage, ambient temperature, and load power factor.
- (b) Voltage Distortion:
 - (i) 1% total harmonic distortion (THD) for linear loads.

- (ii) <4% THD for 100% nonlinear loads (3:1 crest factor) without kVA/kW derating.
- (c) Overload Capability:
 - (i) 125% for ten minutes or greater (without bypass source).
 - (ii) 150% for one minute or greater (without bypass source).
- (d) Voltage Transient Response:
 - (i) 100% load step $\pm 4.0\%$.
 - (ii) Loss or return of AC input power $\pm 1.0\%$.
 - (iii) Manual transfer of 100% load $\pm 3.0\%$.
- (e) Frequency: Nominal frequency $\pm 0.1\%$.
- (f) Frequency Slew Rate: 1.0 Hertz per second maximum.
 - (i) Preferably field selectable from 0.1 to 1.0 Hz per second.
- (g) Phase Displacement:
 - (i) ± 0.5 degree for balanced load,
 - (ii) ± 1.0 degrees for 100% unbalanced load.
- (h) Bypass Line Sync Range:
 - (i) 0.5 Hertz,
 - (ii) Preferably field selectable ± 0.5 to 5.0 Hz.
- (i) Load Power Factor Range: 0.7 lagging to 0.95 leading without derating.
- (j) Output Power Rating: Rated kVA at 0.8 lagging power factor.
- (k) Inverter Output Voltage Adjustment: $\pm 5\%$ manual adjustment.
- (l) Transient Recovery Time: to within 1% of output voltage within one cycle.
- (m) Voltage Unbalance: 100% unbalanced load $\pm 1\%$.

E6.8 Environmental Conditions

- (a) Suitable for use in an industrial facility.
- (b) The UPS shall be able to withstand the following environmental conditions without damage or degradation of operating characteristics:

E6.8.1 Operating Ambient Temperature

- (a) UPS Module: 0°C to 40°C.
- (b) Battery: 25°C ± 5 °C.

E6.8.2 Storage/Transport Ambient Temperature

- (a) UPS Module: -20°C to 70°C.
- (b) Battery: -20°C to 33°C.

E6.8.3 Relative Humidity

- (a) 0 to 95%, non-condensing.

E6.8.4 Altitude

- (a) Maximum altitude without de-rating: >900 meters.

E6.9 Audible Noise

E6.9.1 Noise generated by the UPS under any condition of normal operation shall not exceed 60 dBA measured 1 meter from surface of the UPS.

E6.9.2 Bid Evaluation:

- (a) Preference may be given to quieter units.

- E6.10 The UPS shall have provision for battery status monitoring, which shall include automatic battery tests on a scheduled basis, and be able to report on battery life remaining (estimate), total number of discharges, total time in discharge. The power to the load of the unit shall be completely protected from unanticipated battery failure during these tests.
- E6.11 The UPS shall have controls mounted in panel front.
- E6.12 Discrete Inputs
- E6.12.1 Generator Active input (Preferred)
- E6.12.2 Bid Evaluation:
- (a) Preference may be given to units with the capability to reduce charging current based upon a generator active discrete input.
- E6.13 Parallel Operation
- E6.13.1 The capability for optional parallel operation is desired, but not a requirement of the UPS units specified in E2. Optional capabilities should include:
- (a) Capable of 1+N parallel system operation.
 - (b) Capable of load bus synchronization.
- E6.13.2 Bid evaluation:
- (a) Preference will be given to UPS models with optional parallel operation capabilities.
- E6.14 Documentation
- E6.14.1 Include with each UPS delivery:
- (a) Drawings showing the system configuration with single line diagrams.
 - (b) Dimensions and weights of the equipment.
 - (c) Heat dissipation
 - (d) Detailed layout of customer power and control connections.
 - (e) Detailed installation drawings including all terminal locations.
 - (f) Complete set of operations and maintenance manuals that include:
 - (i) Block diagrams, safety precautions, installation instructions, operation instructions, maintenance instructions, and associated illustrations.
- E6.15 Factory Testing
- E6.15.1 Completely test the system to assure full compliance with the specification prior to shipment.
- E6.16 Materials
- E6.16.1 All materials of the UPS shall be new, of current manufacture, high grade and free from all defects and shall not have been in prior service except as required during factory testing.
- E6.17 Wiring
- E6.17.1 Wiring practices, materials and coding shall be in accordance with the requirements of the Canadian Electrical Code. All electrical power connections are to be torqued to the required value and marked with a visual indicator.
- E6.17.2 Provision shall be made for power cables to enter or leave from the top or bottom of the UPS cabinet.
- E6.18 Construction and Mounting

- E6.18.1 The UPS unit, comprised of an input circuit breaker, rectifier/charger, inverter, static transfer switch and maintenance bypass switch, shall be housed in a single free-standing NEMA type 1 enclosure.
- E6.18.2 Cabinet doors/covers shall require a tool for gaining access.
- E6.18.3 Casters and stops shall be provided for ease of installation.
- E6.18.4 Front access only shall be required for expedient servicing and adjustments.
- E6.18.5 The UPS cabinet shall be structurally sound and have provisions for hoisting, jacking, and forklift handling.
- E6.18.6 Optional Evaluated Feature:
(a) Provide capability for all installation and wiring via front-access only. All wiring to be accessible without moving the unit.
- E6.19 Cooling
- E6.19.1 Cooling of the UPS shall be by forced air. Low-velocity fans shall be used to minimize audible noise output. Fan power shall be provided by the UPS output. There shall be redundant fans.
- E6.19.2 The thermal design, along with all thermal and ambient sensors, shall be coordinated with the protective devices before excessive component or internal cabinet temperatures are exceeded.
- E6.20 Grounding
- E6.20.1 The AC output neutral shall be electrically isolated from the UPS chassis. The UPS chassis shall have an equipment ground terminal. Provisions for local bonding shall be provided.
- E6.21 Rectifier/Charger
- E6.21.1 General
(a) The term rectifier/charger shall denote the solid-state equipment and controls necessary to convert incoming AC power to regulated DC power for input to the inverter and for battery charging. The rectifier/charger shall be a solid-state SCR/IGBT type with constant voltage/current limiting control circuitry.
- E6.21.2 AC Input Current Limiting
(a) The rectifier/charger unit shall be provided with AC input current limiting whereby the maximum input current shall be limited to 125% of the full input current rating. The rectifier/charger shall operate at a reduced current limit mode whenever the critical load is powered from the UPS static bypass circuit such that the maximum UPS input current will not exceed 125% of full load input current. In addition, the rectifier/charger shall have a battery current limit, adjustable from 0 to 25% of the full load input current.
- E6.21.3 Input Current Walk-In
(a) The rectifier/charger preferably will contain a timed walk-in circuit that causes the unit to gradually assume the load over a 20-second time interval after input voltage is applied. Walk-in time shall be field selectable for 5 through 20 seconds.
- E6.21.4 DC Filter
(a) The rectifier/charger shall have a filter to minimize ripple voltage into the battery. Under no conditions shall ripple voltage into the battery exceed 1% RMS. The filter shall be adequate to ensure that the DC output of the rectifier/charger will meet the input requirements of the inverter. The inverter shall be able to operate from the rectifier/charger with the battery disconnected.
- E6.21.5 Battery Recharge

- (a) In addition to supplying power for the inverter load, the rectifier/charger shall be capable of producing battery charging current sufficient to replenish 95% of the battery discharge power within ten (10) times the discharge time. After the battery is recharged, the rectifier/charger shall maintain the battery at full charge until the next emergency operation.

E6.21.6 Overvoltage Protection

- (a) There shall be DC over-voltage protection so that if the DC voltage rises to the pre-set limit, the UPS is to shut down automatically and initiate an uninterrupted load transfer to the static bypass line.

E6.22 Inverter

E6.22.1 General

- (a) The term inverter shall denote the solid-state equipment and controls to convert DC power from the rectifier/charger or battery to regulated AC power for supporting the critical load. The inverter shall use Insulated Gate Bipolar Transistors (IGBTs) in a phase-controlled, pulse width modulated (PWM) design capable of providing the specified AC output.

E6.22.2 Overload Capability

- (a) The inverter shall be capable of supplying current and voltage for overloads exceeding 100%. The inverter is to provide 150% of full load for 1 minute and 125% of full load for 10 minutes. A status indicator and audible alarm shall indicate overload operation. The UPS shall transfer the load to bypass when overload capacity is exceeded.

E6.22.3 Fault Clearing and Current Limit

- (a) The inverter shall be capable of supplying an overload current of 150% of its full-load rating for one minute. For greater currents or longer time duration, the inverter shall have electronic current-limiting protection to prevent damage to components. The critical load will be transferred to the static bypass automatically and without interruption. The inverter shall be self-protecting against any magnitude of connected output overload. Inverter control logic shall sense and disconnect the inverter from the critical AC load without the requirement to clear protective fuses.

E6.22.4 Voltage Distortion

- (a) For linear loads, the output voltage total harmonic distortion (THD) shall not be greater than 1%. For 100% rated load of 3:1 crest factor nonlinear loads, the output voltage total harmonic distortion shall not be greater than 4%. The output rating is not to be derated in kVA nor kW due to the 100% nonlinear load with 3:1 crest factor.

E6.22.5 Phase Balance

- (a) Electronic controls shall be provided to regulate each phase so that an unbalanced loading will not cause the output voltage to go outside the specified voltage unbalance or phase displacement. With 100% load on one phase and 0% load on the other 2 phases or 100% load on 2 phases and 0% load on the other phase, the voltage balance is to be within 2% and the phase displacement is to be 120 degrees within ± 1 degree.

E6.22.6 Fuse Failure Protection

- (a) Power semiconductors in the inverter unit shall be fused with fast-acting fuses, so that loss of any one power semiconductor will not cause cascading failures.

E6.22.7 Inverter Shutdown

- (a) For rapid removal of the inverter from the critical load, the inverter control electronics shall instantaneously turn off the inverter transistors. Simultaneously, the static transfer switch shall be turned on to maintain continuous power to the critical load.

E6.22.8 Inverter DC Protection

- (a) The inverter shall be protected by the following disconnect levels:
 - (i) DC Overvoltage Shutdown
 - (ii) DC Undervoltage Warning (Low Battery Reserve), adjustable
 - (iii) DC Undervoltage Shutdown (End of Discharge)

E6.22.9 Inverter Output Voltage Adjustment

- (a) The inverter shall use a software control to adjust the output voltage from $\pm 5\%$ of the nominal value.

E6.22.10 Output Frequency

E6.22.11 The output frequency of the inverter shall be controlled by an oscillator. The oscillator shall be temperature compensated and hold the inverter output frequency to $\pm 0.1\%$ for steady state and transient conditions. Drift shall not exceed 0.1% during a 24-hour period. Total frequency deviation, including short time fluctuations and drift, shall not exceed 0.1% from the rated frequency.

E6.23 Display and Controls

E6.23.1 Monitoring and Control

- (a) The UPS shall be provided with a microprocessor based unit status display and controls section designed for convenient and reliable user operation. All of the operator controls and monitors shall be located on the front of the UPS cabinet. The monitoring functions such as metering, status and alarms shall be displayed on the graphical LCD display. Additional features of the monitoring system shall include:
 - (i) Menu-driven display with pushbutton navigation
 - (ii) Real time clock (time and date)
 - (iii) Alarm history with time and date stamp
 - (iv) Non-volatile or battery backed-up memory
- (b) Optional Evaluated Feature
 - (i) A graphical single-line diagram of the UPS with appropriate status information will be shown on a mimic display or the LCD display.

E6.23.2 Metering

- (a) The following measured values will be displayed on the front mounted LCD display:
 - (i) Input AC voltage line-to-line for each phase
 - (ii) Input AC current for each phase
 - (iii) Input frequency
 - (iv) Battery voltage
 - (v) Battery charge/discharge current
 - (vi) Output AC voltage line-to-line and line-to-neutral for each phase
 - (vii) Output AC current for each phase
 - (viii) Output frequency
 - (ix) Apparent power
 - (x) Real/Active power
 - (xi) Battery time left during battery operation

E6.23.3 Alarm Messages

- (a) The following alarm messages shall be displayed:
 - (i) Input voltage out of tolerance
 - (ii) Battery charger problem
 - (iii) Battery failed test

- (iv) Low battery warning
- (v) Low battery shutdown
- (vi) DC bus overvoltage
- (vii) Bypass frequency out of range
- (viii) Load transferred to bypass
- (ix) Excessive retransfers attempted
- (x) Static switch failure
- (xi) UPS output not synchronized to bypass power
- (xii) Output undervoltage
- (xiii) Output overvoltage
- (xiv) Output overcurrent
- (xv) System output overloaded
- (xvi) Load transferred to bypass due to overload
- (xvii) Overload shutdown
- (xviii) Control error
- (xix) Critical power supply failure
- (xx) Load transferred due to internal protection
- (xxi) External shutdown (remote EPO activated)
- (xxii) Fan failure
- (xxiii) Overtemperature shutdown impending
- (xxiv) Overtemperature shutdown

(b) An audible alarm shall be provided and activated by any of the above alarm conditions.

E6.23.4 Status Messages

- (a) The following UPS status messages shall be displayed:
- (i) Normal operation
 - (ii) Load on maintenance bypass
 - (iii) Load on UPS
 - (iv) Load on static bypass
 - (v) System shutdown
 - (vi) UPS on battery

E6.23.5 Controls

- (a) UPS start-up, shutdown, and maintenance bypass operations shall be accomplished through the front-panel pushbutton controls. Menu-driven user prompts shall be provided to guide the operator through system operation without the use of additional manuals. Pushbuttons shall be provided to display the status of the UPS and to test and reset visual and audible alarms.

E6.23.6 On-Line Battery Test

- (a) The UPS shall be provided with a menu-driven On-Line Battery Test feature. The test shall ensure the capability of the battery to supply power to the inverter while the load is supplied power in the normal mode.

E6.24 Static Transfer Switch

E6.24.1 General

- (a) A static transfer switch and bypass circuit shall be provided as an integral part of the UPS. The static switch shall be a naturally commutated high-speed static (SCR-type) device rated to conduct full load current continuously. The switch shall have a current rating under overload conditions to clear a 20-ampere load branch circuit breaker.

- (b) The static transfer switch control logic shall contain an automatic transfer control circuit that senses the status of the inverter logic signals, and operating and alarm conditions. This control circuit shall provide an uninterrupted transfer of the load to an alternate bypass source, without exceeding the transient limits specified herein, when an overload or malfunction occurs within the UPS, or for bypassing the UPS for maintenance.

E6.24.2 Uninterrupted Transfer

- (a) The transfer control logic shall automatically turn on the static transfer switch, transferring the critical AC load to the bypass source, after the transfer logic senses any of the following conditions:
 - (i) Inverter overload capacity exceeded
 - (ii) Critical AC load overvoltage or undervoltage
 - (iii) Battery protection period expired
 - (iv) UPS fault condition
- (b) The transfer control logic shall inhibit an automatic transfer of the critical load to the bypass source if any of the following conditions are present:
 - (i) Inverter/bypass voltage difference exceeding preset limits
 - (ii) Bypass frequency out of limits
 - (iii) Bypass out-of-synchronization range with inverter output

E6.24.3 Uninterrupted Retransfer

- (a) Retransfer of the critical AC load from the bypass source to the inverter output shall be automatically initiated unless inhibited by manual control. The transfer control logic shall inhibit an automatic retransfer of the critical load to the inverter if one of the following conditions exists:
 - (i) Bypass out of synchronization range with inverter output
 - (ii) Inverter/bypass voltage difference exceeding preset limits
 - (iii) Overload condition exists in excess of inverter full load rating
 - (iv) UPS fault condition present

E6.25 Integral Maintenance Bypass Switch

E6.25.1 The Integral Maintenance Bypass Switch is an Optional Evaluated Feature.

E6.25.2 General

- (a) A manually operated maintenance bypass switch shall be incorporated into the primary UPS cabinet to directly connect the critical load to the bypass AC input power source, bypassing the rectifier/charger, inverter, and static transfer switch.
- (b) The Integral Maintenance Bypass Switch shall be separate and independent from any external maintenance bypass switch in a separate cabinet.

E6.25.3 Isolation

- (a) All energized terminals shall be shielded to ensure that maintenance personnel do not inadvertently come in contact with energized parts or terminals. A means to de-energize the static switch shall be provided when the UPS is in the maintenance bypass mode of operation.

E6.25.4 Maintenance Capability

- (a) With the critical load powered from the integral maintenance bypass circuit, it shall be possible to check out the operation of the rectifier/charger, inverter, battery, and static transfer switch.

E6.26 Dimensions

- (a) The nominal UPS cabinet dimensions, with internal batteries, are to be no greater than:

- (i) Height: 1600 mm
 - (ii) Width: 600 mm
 - (iii) Depth: 825 mm
- (b) Bid Evaluation:
- (i) Preference will be given to units within the desired dimensions.

E6.27 UPS Start-up

E6.27.1 The UPS will be installed by others.

E6.27.2 Provide a factory-trained field service technician to perform the following on-site services during the UPS start-up.

- (a) Visual Inspection
 - (i) Inspect equipment for signs of damage.
 - (ii) Verify installation per drawings.
 - (iii) Inspect cabinets for foreign objects.
 - (iv) Verify neutral and ground conductors are properly sized and configured.
 - (v) Inspect battery cases.
 - (vi) Inspect battery for proper polarity.
 - (vii) Verify all printed circuit boards are configured properly.
- (b) Mechanical Inspection
 - (i) Check all control wiring connections for tightness.
 - (ii) Check all power wiring connections for tightness.
 - (iii) Check all terminal screws, nuts, and/or spade lugs for tightness.
- (c) Electrical Inspection
 - (i) Check all fuses for continuity.
 - (ii) Confirm input voltage and phase rotation is correct.
 - (iii) Verify control transformer connections are correct for voltages being used.
 - (iv) Assure connection and voltage of the battery string(s).
- (d) Start-up Services
 - (i) Power up the UPS.
 - (ii) Configure and document all settings.
 - (iii) Verify that all status values are in the correct state.
- (e) Training
 - (i) Provide thirty (30) minutes of training to Operations and Maintenance personnel.

E6.27.3 The start-up services are to include all associated components with the UPS, including but not limited to:

- (a) External maintenance bypass switch
- (b) Maintenance Bypass Cabinet With Transformer
- (c) External Battery Cabinet
- (d) Relay Module
- (e) SNMP Module
- (f) Modbus TCP Module

E6.27.4 All costs, including travel and accommodations are to be included in the price for each UPS.

E7. EXTERNAL MAINTENANCE BYPASS SWITCH

E7.1 General

- (a) The purpose of the External Maintenance Bypass Switch is to allow the UPS module to be completely isolated from the electrical system while the critical load is powered through the external maintenance bypass line.

E7.2 Enclosure:

- (a) NEMA 1

E7.3 Maintenance Switch, with make-before-break contacts and the following positions:

- (a) UPS - UPS input on, UPS load on, External Bypass off.
- (b) Line - UPS input on, UPS load off, External Bypass on.
- (c) Service - UPS input off, UPS load off, External Bypass on.
- (d) Off – UPS input off, UPS load off, External Bypass off.

E7.4 Current Rating:

- (a) To meet the maximum input and load current rating of the corresponding UPS rating.

E7.5 Provide start-up services consistent with E6.27.

E7.6 Provision of an External Maintenance Bypass Switch for a 30 KVA UPS is not a mandatory requirement.

E8. MAINTENANCE BYPASS CABINET WITH TRANSFORMER

E8.1 General

- (a) The purpose of the Maintenance Bypass Cabinet is to allow the UPS module to be completely isolated from the electrical system while the critical load is powered through the external maintenance bypass line.

E8.2 Enclosure:

- (a) NEMA 1
- (b) Style and size to match the UPS cabinet.
- (c) Provide a barrier between the UPS cabinet and the Maintenance Bypass Cabinet.
- (d) Only front access shall be required for installation and service.

E8.3 Provide a transformer within the maintenance bypass cabinet:

- (a) Voltage: 600:120/208 V
- (b) Size: As required to support the UPS load and charging currents. Minimum rating to be 40% greater than the base UPS rating.
- (c) Transformers in accordance with CAN/CSA-C22.2 No. 47

E8.4 Include in the maintenance bypass cabinet:

- (a) Input and load breakers, rated appropriately for the size of the UPS.
- (b) Single maintenance switch, with make-before-break contacts and the following positions:
 - (i) UPS - UPS input on, UPS load on, Bypass off.
 - (ii) Line - UPS input on, UPS load off, Bypass on.
 - (iii) Service - UPS input off, UPS load off, Bypass on.
 - (iv) Off – UPS input off, UPS load off, Bypass off.
- (c) Include inter-cabinet wiring to the UPS module.

- E8.5 Current Rating:
- (a) To meet the maximum input and load current rating of the corresponding UPS rating.
- E8.6 Dimensions
- (a) The nominal maintenance bypass cabinet dimensions are to be no greater than:
 - (i) Height: 1600 mm
 - (ii) Width: 690 mm
 - (iii) Depth: 825 mm
 - (b) Bid Evaluation:
 - (i) Preference will be given to units within the desired dimensions.
- E8.7 Provide start-up services consistent with E6.27.
- E8.8 Provision of a Maintenance Bypass Cabinet With Transformer is not a mandatory requirement.
- E9. EXTERNAL BATTERY CABINET**
- E9.1 General
- E9.1.1 The external battery cabinets shall include battery cells housed in a separate cabinet that matches the UPS cabinet styling to form an integral system line-up.
- E9.2 Batteries
- (a) Type: sealed, lead-acid valve regulated
 - (b) Mounting Configuration: mounted on slide-out trays for ease of maintenance.
 - (c) Design Life: 10 years at 25°C
- E9.3 Battery circuit breaker: Required on each external battery cabinet.
- E9.4 Cables: Provide interconnecting cables, pre-cut and pre-lugged between the battery module and UPS module.
- E9.5 Dimensions
- (a) The nominal desired external battery cabinet dimensions are to be no greater than:
 - (i) Height: 1600 mm
 - (ii) Width: 690 mm
 - (iii) Depth: 825 mm
 - (b) Bid Evaluation:
 - (i) Preference will be given to units within the desired dimensions.
- E9.6 Preferred Minimum Battery Runtime:
- E9.6.1 Type 1 Unit:
- (a) Total runtime for 10 KVA UPS Unit with one Type 1 External Battery Cabinet:
 - (i) 97 minutes at full load.
 - (b) Total runtime for 15 KVA UPS Unit with one Type 1 External Battery Cabinet:
 - (i) 62 minutes at full load.
 - (c) Total runtime for 20 KVA UPS Unit with one Type 1 External Battery Cabinet:
 - (i) 41 minutes at full load.
 - (d) Total runtime for 30 KVA UPS Unit with one Type 1 External Battery Cabinet:
 - (i) 26 minutes at full load.

- (e) Bid Evaluation: Preference will be given to units that meet and exceed the desired runtime.

E9.6.2 Type 2 Unit:

- (a) Total runtime for 10 KVA UPS Unit with one Type 2 External Battery Cabinet:
 - (i) 152 minutes at full load.
- (b) Total runtime for 15 KVA UPS Unit with one Type 2 External Battery Cabinet:
 - (i) 96 minutes at full load.
- (c) Total runtime for 20 KVA UPS Unit with one Type 2 External Battery Cabinet:
 - (i) 69 minutes at full load.
- (d) Total runtime for 30 KVA UPS Unit with one Type 2 External Battery Cabinet:
 - (i) 40 minutes at full load.
- (e) Bid Evaluation: Preference will be given to units that meet and exceed the desired runtime.

E9.6.3 Type 3 Unit:

- (a) Total runtime for 10 KVA UPS Unit with one Type 3 External Battery Cabinet:
 - (i) 196 minutes at full load.
- (b) Total runtime for 15 KVA UPS Unit with one Type 3 External Battery Cabinet:
 - (i) 125 minutes at full load.
- (c) Total runtime for 20 KVA UPS Unit with one Type 3 External Battery Cabinet:
 - (i) 82 minutes at full load.
- (d) Total runtime for 30 KVA UPS Unit with one Type 3 External Battery Cabinet:
 - (i) 52 minutes at full load.
- (e) Bid Evaluation: Preference will be given to units that meet and exceed the desired runtime.

E9.6.4 Where the manufacturer's standard offering does not meet the specified requirements, provide the next larger unit if available. If a larger size is not available, provide multiple units as required to meet the specified runtime. Enter price for multiple units into Form B, and the dimensions for the multiple units into the corresponding entry of Form P.

E9.7 Provide start-up services consistent with E6.27.

E10. RELAY MODULE

E10.1 Compatibility:

- (a) Compatible with all of the UPS units proposed.

E10.2 Status contacts:

- (a) Provide isolated Form C status contacts for:
 - (i) Summary Alarm
 - (ii) UPS Fault
 - (iii) Low battery
 - (iv) On Battery Status
 - (v) On Bypass Status
- (b) Bid Evaluation:
 - (i) Preference will be given to units with all of the above status contacts.
- (c) Status contacts to be rated a minimum of 1A @ 24VDC.
- (d) Bid Evaluation:

- (i) Preference will be given units with 1A @ 120VAC rated contacts.

E10.3 External Connection:

- (a) Preferred hardwired terminal strip.
- (b) Bid Evaluation:
 - (i) Preference will be given to units with a hardwired terminal strip rather than a DB25 or similar style connector.

E10.4 Power Supply

- (a) Internal to the UPS

E10.5 Wiring

- (a) Bid Evaluation:
 - (i) Preference will be given to products that allow for permanent installation of the network cable utilizing an industrial method of wiring.

E10.6 Bid Evaluation Clarification:

- (a) Provision of a relay interface is a mandatory (pass/fail) requirement. The specific status points available may be slightly different provided that the general capability is provided.

E10.7 Provide start-up services consistent with E6.27.

E11. SNMP MODULE

E11.1 Compatibility:

- (a) Compatible with all of the UPS units proposed.

E11.2 External Connection:

- (a) RJ45 Ethernet

E11.3 Desired protocol support:

- (a) SNMP v1, SNMP v2c, SNMP v3, HTTP, BootP, DHCP, E-mail
- (b) Bid Evaluation:
 - (i) Preference will be given to products that support all of the desired protocols.

E11.4 Power Supply

- (a) Internal to the UPS

E11.5 Wiring

- (a) Bid Evaluation:
 - (i) Preference will be given to products that allow for permanent installation of the network cable utilizing an industrial method of wiring.

E11.6 Provision of a SNMP module is not a mandatory requirement.

E11.7 Provide start-up services consistent with E6.27.

E12. MODBUS TCP MODULE

E12.1 Compatibility:

- (a) Compatible with all of the UPS units proposed.

E12.2 External Connection:

- (a) RJ45 Ethernet

- E12.3 Protocol support:
- (a) Modbus TCP/IP
 - (b) Bid Evaluation:
 - (i) Preference will be given to units that provide comprehensive unit monitoring via the Modbus TCP/IP interface.

- E12.4 Power Supply
- (a) Internal to the UPS

- E12.5 Wiring
- (a) Bid Evaluation:
 - (i) Preference will be given to products that allow for permanent installation of the network cable utilizing an industrial method of wiring.

E12.6 Provision of a Modbus TCP module is not a mandatory requirement.

E12.7 Provide start-up services consistent with E6.27.

E13. FIELD SERVICE

E13.1 Provide field service, on an as-requested basis, on the installed UPS installations. Field service shall not be applicable for warranty or any work covered under a service and support agreement.

E13.2 The rate provided for field service shall be all inclusive and include travel costs, tools, shop supplies, etc.

E13.3 Field service rates shall not apply to UPS start-up services, which shall be included in the equipment prices.

E13.4 Service Personnel

E13.4.1 The UPS manufacturer shall directly employ a nationwide service organization, consisting of factory trained field service personnel dedicated to the start-up, maintenance, and repair of UPS and power equipment. The organization shall have an authorized field service center within 300 km of Winnipeg.

E13.4.2 The manufacturer shall provide a fully automated national dispatch center to coordinate field service personnel schedules. One toll-free number shall reach a qualified support person 24 hours/day, 7 days/week, and 365 days/year. If emergency service is required, response time shall be 20 minutes or less.

E13.4.3 An automated procedure shall be in place to ensure that the manufacturer is dedicating the appropriate technical support resources to match escalating customer needs.

E14. REPLACEMENT PARTS

E14.1 Replacement Parts Stocking

E14.1.1 Parts shall be available through an extensive network to ensure around-the-clock parts availability throughout the country.

E14.1.2 Recommended spare parts shall be fully stocked by local field service personnel with back-up available from national parts center and the manufacturing location. The national parts center Customer Support Parts Coordinators shall be on-call 24 hours/day, 7 days/week, and 365 days/year for immediate parts availability. Parts from the national parts center shall be delivered to the customer's site within 24 hours.

E15. SERVICE AND SUPPORT AGREEMENT

- E15.1 Provision of a Service and Support Agreement is not mandatory. Refer to E15.8.
- E15.2 The City may at its discretion choose whether to accept all or part of the Service and Support agreement.
- E15.3 Enter the annual base price for the City on Form B, Line 23, which does not include the price per equipment supplied. Enter the annual price for each unit of equipment supplied in the corresponding column of Form B. The total price shall be the annual base price (Form B Line 23) plus the sum of the covered quantity for each line item multiplied by the Annual Service and Support Agreement price.
- E15.4 The service provided under the Service and Support agreement shall be performed by factory-trained service personnel.
- E15.5 Provide the following support:
- E15.5.1 Provide guaranteed 24 hour on-site emergency response, 7 days/week, 24 hours/day.
 - E15.5.2 Provide a toll-free call response centre, open 24 hours/day, 7 days/week, with technical support and technician call-out capability.
 - E15.5.3 All labour and travel costs shall be 100% included in the proposal, including scheduled and emergency field service.
- E15.6 The desired annual service to be performed for each UPS units is as follows:
- E15.6.1 Measure the phase to phase and phase to neutral input voltages.
 - E15.6.2 Perform a complete visual inspection of the equipment, including sub-assemblies, wiring harnesses, contacts, cables, and major components.
 - E15.6.3 Check air filters for cleanliness.
 - E15.6.4 Visually check nuts, bolts, screws, and connectors for heat discoloration.
 - E15.6.5 Visually inspect for broken, brittle, damaged, or heat stressed components and cables.
 - E15.6.6 Perform a status check of all alarm circuits and display messages.
 - E15.6.7 Perform an operational test of the system.
 - E15.6.8 Verify DC bus reading and calibrate as necessary.
 - E15.6.9 Verify the output and float voltages. Calibrate as necessary.
 - E15.6.10 Review system performance with the City to address any system questions.
- E15.7 The desired annual service to be performed for all batteries, including the internal batteries in the UPS is as follows
- E15.7.1 Check integrity of battery cabinet.
 - E15.7.2 Inspect the cleanliness of the battery cabinet and clean the cabinet.
 - E15.7.3 Visually inspect battery system for: Swelling, leaks, loose foreign objects, overheated or corroded cables and connectors, loose connections on batteries, and appropriate product labels related to safety and warning hazards.
 - E15.7.4 Measure and record the total battery float voltage and charging current.
 - E15.7.5 Measure and record the overall AC ripple voltage.
 - E15.7.6 Measure and record the overall AC ripple current.
 - E15.7.7 Visually inspect the jars and covers for cracks and leakage.

- E15.7.8 Visually inspect for evidence of corrosion.
 - E15.7.9 Measure and record the ambient temperature.
 - E15.7.10 Verify the condition of the ventilation equipment, if applicable.
 - E15.7.11 Verify the integrity of the battery rack/cabinet.
 - E15.7.12 Measure and record 100% of the cell temperatures.
 - E15.7.13 Measure and record the float voltage of all cells.
 - E15.7.14 Measure and record all internal impedance readings.
 - E15.7.15 Re-tighten all connections to the battery manufacturer's specifications.
 - E15.7.16 Measure and record all battery connection resistances in micro-ohms.
 - E15.7.17 Refurbish all deficient or poor cell connections.
 - E15.7.18 Provide a detailed written report noting any deficiencies and corrective action needed, taken and/or planned.
- E15.8 Bid Evaluation
- (a) The content of the proposed service and support agreement will be part of the Bid Evaluation.
 - (b) In the event that a service and support agreement is not proposed, evaluation will be as per B21.9, and B22.4.9.
 - (c) In the event that terms and/or conditions are applied to the offer for the service and support agreement, that are not consistent with the requirements of this Bid Opportunity, the Proposal will be evaluated as per B21.9.