



**THE CITY OF WINNIPEG**

# **REQUEST FOR PROPOSAL**

**RFP NO. 331-2014**

**SUPPLY AND DELIVERY OF ELECTRIC VALVE ACTUATORS FOR THE SEWAGE  
TREATMENT PROGRAM**

**BIDDERS PLEASE NOTE CLAUSE D13**

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## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

B1.1 SUPPLY AND DELIVERY OF ELECTRIC VALVE ACTUATORS FOR THE SEWAGE TREATMENT PROGRAM

### **B2. SUBMISSION DEADLINE**

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, May 29, 2014.

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 D6.1.

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 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. The use and disclosure of the confidential information shall not apply to information which:

- (a) was known to the Bidder before receipt hereof; or
- (b) becomes publicly known other than through the Bidder; or
- (c) is disclosed pursuant to the requirements of a governmental authority or judicial order.

B4.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Request For Proposal Opportunity 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 B20.
- 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 B7.7, deviations inconsistent with the Request for Proposal document shall be evaluated in accordance with B20.1(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;
  - (d) Form P: Proposal Information;
- B7.2 The Proposal should consist of the following components:
- (a) Published Price List;
  - (b) Technical Information.
- B7.3 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.
- B7.4 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.
- B7.4.1 Bidders should submit one (1) unbound 8.5” x 11” original (marked “original”) including drawings and six (6) bound copies (copies can be in any size format).
- (a) The unbound original should include all proposal components, including Technical Information.
  - (b) The copies should include the entire proposal, except the Technical Information, which should be submitted as per B7.5.
- B7.4.2 Submit six (6) CDs/DVDs of the complete proposal submission in searchable electronic PDF format.
- B7.4.3 In case of a discrepancy between the paper and electronic copies, the paper copy will take precedence.
- B7.5 Bidders should submit the Technical Information in the following format:
- B7.5.1 One paper hard copy in the (1) unbound original copy as per B7.4.1.
  - B7.5.2 In electronic format on the CDs/DVDs as per B7.4.2.
  - B7.5.3 In case of a discrepancy between the paper and electronic copies, the paper copy will be adhered to.

- B7.6 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.
- B7.6.1 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.
- B7.7 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 B20.1(a).
- B7.8 Proposals submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B7.9 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. 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 Where applicable to the Request for Proposal, payments for services to Non-Resident Bidders are subject to a Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B9.5 The prices entered in the Unit List Price column of Form B shall be the current published list price of the item, without any discounts applied. The price shall be consistent with the manufacturer's Published Price List, as per B12. Where multiple products are included in the Form B price, the price shall be the sum of the list price of the various components.

B9.6 The prices entered in the Discounted Unit Price column of Form B shall be the current Unit List Price of the item, as per B9.5, with the applicable discount indicated on Form B applied.

B9.6.1 The Discounted Unit Price shall be the Unit List Price multiplied by  $(1 - \text{discount})$ .

B9.7 The prices entered in the Discounted Unit Price column of Form B shall be the final offered selling price for the period from award to December 31, 2015.

B9.8 Where a hardware field setup and configuration tool is not proposed, enter a price of 0 for Form B, Item 9.

B9.9 The Bidder shall enter a standard discount off list price that shall apply to the manufacturer's entire product range of electric actuators on Form B, Item 15, except as indicated in B9.10. The Form B Discounted Unit Price for all applicable items shall be consistent with the indicated discount factor.

B9.10 The Bidder may enter a standard discount off list price that shall apply to a selected portion of the manufacturer's product offering, as indicated on Form B, Item 16. The Form B Discounted Unit Price for all applicable items shall be consistent with the indicated discount factor.

B9.10.1 The discount factor indicated on Form B, Item 16 must be utilized for a significant portion of the manufacturer's electric actuator offering, and may not be utilized to justify a lower discount factor for a small selection of the manufacturer's product offering.



- (a) For example, use of the separate discount factor for electric actuators rated for hazardous locations is acceptable.
  - (b) For example, use of the separate discount factor to justify a lower discount for spare parts is not acceptable.
- B9.10.2 If a separate discount factor is not proposed in not proposed Form B, Item 16, enter "N/A" or "Not Applicable" in the corresponding Form B line.
- B9.10.3 If a separate discount factor is proposed in proposed Form B, Item 16, the proposal shall clearly identify which products utilize the separate discount factor indicated.
- B9.11 By submitting a proposal, the Bidder acknowledges and agrees that the pricing discount level provided on Form B is effectively provided for the manufacturer's entire electric actuator offering, including spare parts.
- B9.12 In the event that a discrepancy between the Form B Discounted Unit Price and the Unit List Price reduced by the corresponding discount factor, the Unit List Price reduced by the corresponding discount factor shall be utilized.
- B9.13 The unit price for Form B, Item 11 shall be the cost for setup and commissioning of a single actuator.
- B9.14 The price for Form B, Item 14 shall include travel expenses, tools, shop supplies, etc.
- B9.14.1 The hourly rate for field service may apply to travel time from a location within Winnipeg to site, up to a maximum of one hour per visit. Additional travel time required will not be reimbursed.
- B9.14.2 The maximum permissible field service rate for Form B, Item 14 is \$150/hour. In the event that the labour rate indicated on Form B, is greater than the specified maximum rate, the maximum rate will be utilized for the purpose of bid evaluation.
- B10. PRICE ADJUSTMENT PROPOSAL (FORM N)**
- B10.1 The Bidder shall complete Form N: Price Adjustment Proposal, making all required entries.
- B10.2 Provision of a price adjustment proposal is a mandatory requirement.
  - (a) Failure to provide a Price Adjustment Proposal will be evaluated in accordance with B20.1(a).
- B10.3 The Price Adjustment Proposal is applicable to all products in this Request for Proposal and the manufacturer's entire range of electric actuator products.
- B10.4 The price in effect shall be based upon the date that the purchase order is submitted to the Contractor.
- B10.5 Fixed Price Period
- B10.5.1 The prices indicated on Form B will be fixed through to December 31, 2015.
- B10.5.2 No escalation of prices will be permitted during this period for any cause.
- B10.6 Price adjustments will occur annually with the first adjustment taking effect on January 1, 2016.
- B10.7 Complete Form N to indicate the method, and details of price determination after the expiration of the fixed prices.

## B10.8 Fixed Escalation Rate

B10.8.1 If the Price Adjustment is proposed to be based on a Fixed Escalation Rate, 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 first day after the Fixed Price Period.
- (c) Price adjustments will be made in accordance with the percentage change indicated on Form N.
- (d) Provision of a fixed escalation rate is mandatory through until December 31, 2020.
- (e) In the event that an escalation rate is not proposed for a given year:
  - (i) The actual escalation rate to be utilized will be negotiated with the City.
  - (ii) The Bid will be evaluated in accordance with B21.4.2(b).

B10.8.2 In the event that a Currency Exchange Factor is proposed to be utilized, the effective price will be adjusted by the Currency Exchange Factor as per B10.11.

## B10.9 Published List Prices

B10.9.1 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 Price List, as indicated on Form B.
- (b) The manufacturer shall employ a standard practice of utilizing constant discount percentages, and modifying the standard list price to account for the manufacturer's escalation.

B10.9.2 The selling price shall be based on the discount off list price indicated on Form B.

- (a) The discount off list price indicated on Form B shall be a percentage of the list price that is subtracted from the list price to determine the actual price.
- (b) Example: If a discount of 20% is indicated and the list price is \$1,000, the actual price would be \$800.

B10.9.3 In the event that a Currency Exchange Factor is proposed to be utilized, the effective price will be adjusted by the Currency Exchange Factor as per B10.11.

B10.9.4 The prices indicated on Form B must be consistent with the Published 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.

B10.9.5 The City reserves the right to use external sources to verify the validity of the Published Price List provided.

B10.9.6 The escalation of prices on the standard price lists shall not exceed accepted market conditions. The City reserves the right to negotiate the prices or cancel the Contract in the event that the price increments are excessive.

B10.9.7 A new Published Price List shall be submitted to the Contract Administrator a minimum of 60 days prior to the new prices taking effect.

B10.9.8 A new Published Price List will be accepted for price adjustment annually. The discount off list price indicated on Form B, shall not change. The price list must be in effect on January 1 of the year the prices take effect.

- (a) The new prices will come into effect on January 1, 2016 and on January 1 annually thereafter.

## 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 January 1, 2016.
- (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 on the date of the Bid Submission Deadline and the latest index data available thirty (30) Calendar 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.

B10.10.2 In the event that a US based Index is proposed and that a Currency Exchange Factor is proposed to be utilized, the effective price will be adjusted by the Currency Exchange Factor as per B10.11.

B10.10.3 The Indexed Price Adjustment shall apply to the Form B prices, as well as the manufacturer's complete electric actuator offering.

- (a) The base prices for equipment not specifically listed on Form B will be based upon the published list price in effect at the time of the bid and the discount factor indicated on Form B.

## B10.11 Currency Exchange Factor

B10.11.1 If applicable, a Currency Exchange Factor is the value which the discounted price is multiplied by to arrive at the final selling price.

B10.11.2 A Currency Exchange Factor shall apply if:

- (a) The Bidder proposes a Fixed Escalation Rate on Form N, and indicates that a Currency Exchange Factor shall apply.
- (b) The Bidder proposes that price adjustment shall be via Published List Prices, that the Published Price List is not in Canadian Dollars and that a Currency Exchange Factor shall apply.
- (c) The Bidder proposes that price adjustment shall be via Indexed Price Adjustment, that the escalation shall be based on a US index and that a Currency Exchange Factor shall apply.

B10.11.3 The currency exchange rate utilized shall be based on the noon exchange rates posted by the Bank of Canada. All currency exchange rates shall be expressed in terms of the value of the Canadian Dollar in terms of US Dollars or the alternate currency proposed.

B10.11.4 The noon currency exchange rate of the last twenty (20) Business Days prior to and including the Bid Submission Deadline shall be recorded and the average shall be deemed the original exchange rate.

B10.11.5 The initial value of the Currency Exchange Factor shall be 1.0 from Contract Award until December 31, 2015.

B10.11.6 Effective January 1, 2016, the Currency Exchange Factor will be reviewed and updated on an intermittent basis, not more frequent than sixty (60) Calendar Days. A review and potential update of the Currency Exchange Factor will be initiated upon a request for pricing of one or more specific actuators.

- B10.11.7 Upon a request for pricing of a specific actuator, the Currency Exchange Factor may be updated to reflect the current exchange rate. An update to the Currency Exchange Factor is required where the current Currency Exchange Factor was established a minimum of sixty (60) Calendar days prior to the current date and the resulting calculated new exchange would result in a one percent (1%) or greater change of the Currency Exchange Factor.
- B10.11.8 Updates to the Currency Exchange Factor shall be calculated as follows:
- (a) The new Currency Exchange Factor shall be calculated as the original exchange rate divided by the average noon currency exchange rate for the last twenty (20) Business Days. The Currency Exchange Factor shall be rounded the nearest one thousandth (0.001).
  - (b) For example:
    - (i) If a Currency Exchange Factor (Can\$ / US\$) is proposed and the Can\$ to US\$ noon exchange rate on the date of the Bid Submission Deadline is 0.900, this will be deemed the original exchange rate. The prices in effect will be as per Form B and the indicated discount factors, multiplied by the Currency Exchange Factor, which has a value of 1.
    - (ii) If a Bid Opportunity is issued for tender on May 1, 2016 and the 20-day average Can\$ to US\$ exchange rate is 0.850, the Currency Exchange Factor will be calculated as  $0.900 / 0.850 = 1.059$ . This Currency Exchange Factor, once approved by the Contract Administrator, will be in effect for the duration of the Bid Opportunity.
    - (iii) If on June 15, 2017 another Bid Opportunity is issued for tender and the 20-day average Can\$ to US\$ exchange rate is 0.95, the Currency Exchange Factor will be calculated as  $0.900 / 0.950 = 0.947$ . This Currency Exchange Factor, once approved by the Contract Administrator, will be in effect for the duration of the Bid Opportunity.
- B10.11.9 All modifications of the Currency Exchange Factor shall be approved by the Contract Administrator.
- (a) Submit the proposed Currency Exchange Factor and supporting calculations to the Contract Administrator. Allow a minimum of five (5) Business days for review.
- B10.11.10 The Contract Administrator may reject any Currency Exchange Factor that is not reasonable or reflective of the current exchange rate trends. For example, the Contract Administrator may reject a Currency Exchange Factor based upon a short term event causing an abnormal deviation in the exchange rate.
- B10.11.11 The Currency Exchange Factor may either increase or lower the effective price in Canadian dollars.
- B10.11.12 The approved updated Currency Exchange Factor shall be:
- (a) Applicable for a minimum of sixty (60) Calendar days.
  - (b) Constant for all quotations to Installation Contractors during a single City of Winnipeg Bid Opportunity event.
  - (c) The Currency Exchange Rate utilized for a quotation shall not expire for a minimum of 180 Calendar days. The Currency Exchange Factor on the invoice shall be the same as on the quotation.
- B10.12 The Bidder's Price Adjustment proposal will be reflected in the calculation of the Evaluated Bid Price as per B21.
- B10.13 Contract Extension Prices
- B10.13.1 As indicated in D3, the City may negotiate a Contract extension with the Contractor. The prices for the Contract extension shall be consistent with 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. PUBLISHED PRICE LIST**

- B12.1 The Bidder shall provide a comprehensive manufacturer Published Price List.
- B12.2 The scope of the Published Price List should include:
- (a) All products proposed as part of the Bidder's proposal;
  - (b) The manufacturer's entire electric actuator product offering,
- B12.3 The Published Price List shall be a published standard list of prices, applicable to all sales by the manufacturer in Canada and/or the United States of America. 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.
- B12.4 The currency of the Published Price List shall be clearly indicated on the price list.
- B12.5 The price list should be included in both the Bidder's paper and electronic proposal.
- B12.6 The complete provision of the Published Price List is not a mandatory bid requirement, but lack thereof, or incomplete information, may affect the bid evaluation as per B20.

**B13. TECHNICAL INFORMATION**

- B13.1 The Bidder should provide the following technical information:
- (a) Product datasheets for all the products proposed;
  - (b) Documents to support claims made in Form P;
  - (c) Installation Manuals;
  - (d) Operation Manuals;
  - (e) Maintenance Manuals.
  - (f) Other documents that represent the manufacturer capabilities, relating to the City's requirements.
- B13.2 The complete provision of the above information is not a mandatory bid requirement, but lack of information, or incomplete information, may affect the bid evaluation as per B20.

**B14. QUALIFICATION**

- B14.1 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 and manufacture of control systems and motor control systems.

- B14.2 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>
- B14.3 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).
- B14.4 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.
- B14.5 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.

## **B15. OPENING OF PROPOSALS AND RELEASE OF INFORMATION**

- B15.1 Proposals will not be opened publicly.
- B15.2 After award of Contract, the names of the Bidders and the Contract amount of the successful Bidder 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/>
- B15.3 To the extent permitted, the City shall treat all Proposal as confidential, however the Bidder is advised that any information contained in any Proposal Submission 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.
- B15.4 Following the award of Contract, a Proponent will be provided with information related to the evaluation of its submission upon written request to the Project Manager.

## **B16. IRREVOCABLE OFFER**

- B16.1 The Proposal(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 10 of Form A: Proposal.
- B16.2 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.

## **B17. WITHDRAWAL OF OFFERS**

- B17.1 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.
- B17.1.1 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.

- B17.1.2 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.
- B17.1.3 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 B17.1.3(b), declare the Proposal withdrawn.
- B17.2 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 B16.2 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.

## **B18. INTERVIEWS**

- B18.1 The Contract Administrator may, in his/her sole discretion, interview Bidders during the evaluation process.

## **B19. NEGOTIATIONS**

- B19.1 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.
- B19.2 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.
- B19.3 If, in the course of negotiations pursuant to B19.2 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.

## **B20. EVALUATION OF PROPOSALS**

- B20.1 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 B9.12                                | (pass/fail); |
| (c) Evaluated Bid Price   | 40 %         |
| (d) Pricing Completeness and Consistency  | 1 %          |
| (e) Product Lifecycle Guarantee   | 2 %          |
| (f) Electric Actuator Technical Features - General  | 33%          |
| (g) Electric Actuator – Specific Proposed Actuator Details  | 15%          |
| (h) Configuration Tools – Hardware and Software   | 2 %          |
| (i) Warranty  | 5 %          |
| (j) Service and Support   | 2 %          |
| (k) economic analysis of any approved alternative pursuant to B6;   |              |
- B20.2 Further to B20.1(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.
- B20.3 Further to B20.1(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.
- B20.4 Further to B20.1(c), the Evaluated Bid Price will be calculated as per B21.
- B20.5 Further to B20.1(d), the Pricing Completeness and Consistency will be evaluated based upon completeness, consistency, and overall effectiveness in providing transparent pricing to the City of Winnipeg.
- (a) Bidders who do not provide a Published Price List as per B12 will receive a score of zero (0) for this criteria item.
- B20.6 Further to B20.1(e), the Product Lifecycle Guarantee will be evaluated based upon Form P.
- B20.7 Further to B20.1(f), the Electric Actuator Technical Features - General will be evaluated utilizing the following as sources:
- (a) Form P;
- (b) Technical Information provided as per B13.
- (c) Other information submitted with the proposal.
- B20.8 Further to B20.1(g), the Electric Actuator – Specific Proposed Actuator Details will be evaluated utilizing the following as sources:
- (a) Form P;
- (b) Technical Information provided as per B13.
- (c) Other information submitted with the proposal.
- B20.9 Further to B20.1(h), the Configuration Tools – Hardware and Software will be evaluated utilizing the following as sources:
- (a) Form P;
- (b) Technical Information provided as per B13.



(c) Other information submitted with the proposal.

B20.10 Further to B20.1(i), the Warranty will be evaluated utilizing the following as sources:

- (a) Form P;
- (b) Technical Information provided as per B13.
- (c) Other information submitted with the proposal.

B20.11 Further to B20.1(j), the Service / Support will be evaluated based upon the proposal information submitted in Form P and other information submitted with the proposal, considering the service and support requirements of the City.

B20.12 The City may utilize the information available on the manufacturer's website to confirm and clarify information in the proposal.

B20.13 This Contract will be awarded as a whole.

B20.14 If, in the sole opinion of the City, a Proposal does not achieve a pass rating for B20.1(a) and B20.1(b), the Proposal will be determined to be non-responsive and will not be further evaluated.

## **B21. EVALUATED BID PRICE**

B21.1 The subtotal bid price will be calculated based upon Form B as the sum of the estimated quantities multiplied by the unit prices for Items 1 through 14.

B21.2 The Estimated Cost Per Year will be calculated as follows:

- (a) Year 0 (2014): 0% of the subtotal bid price;
- (b) Year 1 (2015): 2% of the subtotal bid price;
- (c) Year 2 (2016): 15% of the subtotal bid price, plus escalation;
- (d) Year 3 (2017): 15% of the subtotal bid price, plus escalation, plus currency exchange rate factor indicated in B21.4.1;
- (e) Year 4 (2018): 8% of the subtotal bid price, plus escalation;
- (f) Year 5 (2019): 10% of the subtotal bid price, plus escalation;
- (g) Year 6 (2020): 14% of the subtotal bid price, plus escalation;
- (h) Year 7 (2021): 15% of the subtotal bid price, plus escalation;
- (i) Year 8 (2022): 15% of the subtotal bid price, plus escalation;
- (j) Year 9 (2023): 4% of the subtotal bid price, plus escalation;
- (k) Year 10(2024): 2% of the subtotal bid price, plus escalation.

B21.3 Further to B20.1(c), 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.

B21.4 The estimated total escalation for each year will be based upon the Bidder's Price Adjustment Proposal in Form N.

B21.4.1 If the Price Adjustment includes a Currency Exchange, an additional escalation rate of 5.0% shall be added to the escalation for January 1, 2017. Note that the escalation is cumulative and thus all subsequent years will be affected.

B21.4.2 If the Price Adjustment is proposed to be based on a Fixed Escalation Rate, 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 after December 31, 2020, the annual escalation assumed for the purpose of bid evaluation will be the maximum price increase for the respective year from all other responsive bids, or 7%, whichever is greater.

B21.4.3 If the Price Adjustment is proposed to be based on Published List Prices, the following shall apply:

- (a) An annual escalation value of 4.5% will be assumed for the calculation of the Evaluated Bid Price, provided that a Published Canadian Price List is found to be consistent with Form B and the applicable discount proposed on Form B.
- (b) In the event that the standard list prices are not determined to be sufficiently consistent with Form B and the applicable discount proposed on Form B, an annual escalation value of 5.0% will be assumed.
- (c) In the event that the standard list price has, in the opinion of the Contract Administrators, major inconsistencies with Form B and the applicable discount proposed on Form B, the Contract Administrator may determine the bid non-responsive.

B21.4.4 If the Price Adjustment is proposed to be based on Indexed Price Adjustment, the following shall apply:

- (a) An annual escalation rate of 3.0% 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.

B21.5 In the event that the products proposed will result in additional design and/or installation costs for the City, the bid will be normalized by adding a nominal value to the corresponding Form B price, for the purpose of Bid Evaluation.

B21.5.1 In the event the Bidder proposes a product that does not utilize the integral (primary) actuator power supply for the anti-condensation heater, as per E8.7.2, the City will assign an additional cost of \$1200 per actuator to the Form B price.

B21.6 In the event that a product is not proposed for any item on Form B, the City may:

- (a) Deem the bid nonresponsive in accordance with B20.2; or
- (b) Utilize for the purpose of Bid Evaluation, the average price for the item of the other responsive Bids; or
- (c) In the event that the product specified is adequately addressed by other products in the Bidder's proposal, a price of zero will be utilized for the corresponding line item.

B21.7 In the event that the Unit List Price indicated on Form B is not consistent with the List Prices provided in the Published Canadian Price List, the Contract Administrator may:

B21.7.1 Deem the bid nonresponsive in accordance with B20.2; or

B21.7.2 Select the Unit List Price indicated on Form B for the purpose of bid evaluation.

B21.8 In the event that, in the Contract Administrator's opinion, a specified component of the Form B price appears to be missing, the Contract Administrator may:

B21.8.1 Deem the bid nonresponsive in accordance with B20.2; or

B21.8.2 For the purposes of bid evaluation, normalize the bid by adding a nominal value to the Form B price to address the missing component. The nominal value may be from the Published Canadian Price List, multiplied by the proposed discount factor, or the average discounted price for the equivalent component from the other bidders.

**B22. AWARD OF CONTRACT**

- B22.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B22.2 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.
- B22.2.1 Without limiting the generality of B22.2, 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.
- B22.3 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 B20.
- B22.4 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 Contract 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](http://www.winnipeg.ca/matmgt/gen_cond.stm)
- C0.2 A reference in the Request for 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 multi-turn and quarter turn electric valve manufacturer for the City's Sewage Treatment Program and set the conditions for supply.

D2.2 The quantities indicated on Form B are the current best estimate of the equipment to be procured, however the City's upgrade and expansion plans are still in development, and thus the actual quantities purchased are subject to change.

D2.3 It is intended that the manufacturer selected by this RFP process may be considered the standard for multi-turn and quarter turn electric valve actuators to be utilized for the City of Winnipeg wastewater treatment facilities.

D2.3.1 The standardization is intended to apply to electric valve actuators with an on-off torque requirement above approximately 250 Nm and modulating torques above approximately 150 Nm. The City may, at its option, purchase electric valve actuators with lower torque requirements under this Contract.

- (a) There may be cases where electric valve actuators may be procured from other manufacturers via alternate channels. This is most likely to occur for electric actuators at the lower end torque range of the proposed product offering. The City shall have no obligation to the Contractor in the event an electric actuator is purchased from another manufacturer or distribution channel.

D2.3.2 The City may procure electric valve actuators, not specifically identified under this Request For Proposal, via this Contract without initiating a separate Bid Opportunity / Request For Proposal process.

D2.4 The Goods to be purchased under this Contract are intended to be utilized at the SEWPCC, NEWPCC, and WEWPCC facilities.

D2.5 The City of Winnipeg reserves the right to procure equipment under this Contract for other City of Winnipeg facilities, without initiating a separate Bid Opportunity process.

#### **D3. SCOPE OF WORK**

D3.1 The Work to be done under the Contract shall consist of supply and delivery of multi-turn and quarter-turn electric valve actuators for the period from Contract award until September 30, 2019 with the option of four (4) five (5) year extensions.

D3.1.1 The City may extend the term of this Contract upon the first expiry, dated September 30, 2019, by providing written notice to the Contractor within one hundred twenty (120) Calendar Days prior to the expiry date of the Contract.

- (a) If exercised by the City, the first five (5) year extension of the Contract is mandatory for the Contractor.
- (b) The City shall incur no liability to the Contractor if the option is not exercised.

- D3.1.2 All subsequent Contract extensions after September 30, 2024 shall be mutually agreed upon between the City and the Contractor, based upon negotiations.
- (a) The City may negotiate the extension option with the Contractor within one hundred eighty (180) 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.
  - (b) Changes resulting from such negotiations shall become effective on October 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 extensions shall be consistent with the Price Proposal indicated in Form N and B9.12.
- 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 Installation Contractors by 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. PROCUREMENT VIA INSTALLATION CONTRACTORS**

- D4.1 Procurement of Goods under this Contract may be directly by the City, or indirectly via an Installation Contractor engaged by the City.
- D4.1.1 It is expected that most of the Goods purchased under the Contract will be via Installation Contractors engaged by the City.
- D4.2 The Contractor shall allow Installation Contractors to procure equipment on behalf of the City, based upon the pricing, technical specifications and delivery requirements of this Contract.
- D4.3 The pricing provided to Installation Contractors shall be as per the Contract. No additional surcharges shall be applied.
- D4.4 Payment for all Goods procured via an Installation Contractor shall be the responsibility of the Installation Contractor, as per D18.1.
- D4.5 The City shall incur no liability to the Contractor for Goods procured via an Installation Contractor, other than that required by Provincial Regulations (Builders' Liens Act).
- D4.6 The Contractor shall not impose any restrictions or conditions on the Installation Contractors in relation to this Contract.
- D4.7 Failure to deliver Goods to the Installation Contractor may be determined to be an event of default under this Contract.
- D4.8 Upon request by the City or a potential Installation Contractor for installation work on behalf of the City, the Contractor shall provide an itemized quotation for the Goods, consistent with the terms of the Contract.
- D4.9 Where the City issues a Bid Opportunity, which includes the supply and installation of Goods related to this Contract, the Contractor shall review the Bid Opportunity package to identify and confirm the scope of Goods required under the Bid Opportunity. The quotation of Goods shall be comprehensive to the requirements of the Bid Opportunity.
- D4.10 The Contractor shall provide an equal quotation to all potential Installation Contractors, consistent with the terms of the Contract.
- D4.10.1 The Contractor shall supply a copy of the quotation made to potential Installation Contractors to the Contract Administrator, upon request.

- D4.11 Invoices to Installation Contractors must clearly indicate, as a minimum:
- (a) the City's Bid Opportunity Number shall be indicated;
  - (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.
  - (g) The Installation Contractor's name.
- D4.12 The Goods delivered and associated amounts payable must be clearly itemized and priced in a manner to allow the City to verify that the proposed pricing and terms of the Contract are being adhered to.

## D5. DEFINITIONS

D5.1 When used in this Request for Proposal:

- (a) "AC" means Alternating Current.
- (b) "DC" means Direct Current.
- (c) "FDT" means Field Device Tool (PROFIBUS)
- (d) "GSD" means General Station Data (PROFIBUS)
- (e) "NC" means Normally Closed.
- (f) "NEWPCC" means North End Water Pollution Control Centre.
- (g) "NO" means Normally Open.
- (h) "O&M" means Operation and Maintenance.
- (i) "SEWPCC" means South End Water Pollution Control Centre.
- (j) "WEWPCC" means West End Water Pollution Control Centre.

D5.2 Notwithstanding C1.1, when used in this Request for Proposal:

- (a) "**Installation Contractor**" means the person undertaking construction or implementation work under a separate contract with the City, who will utilize the pricing, terms, and conditions of this Contract to procure equipment for performing the work under the separate contract. The Installation Contractor may be a subcontractor or supplier to a contractor engaged by the City.

## D6. CONTRACT ADMINISTRATOR

D6.1 The Contract Administrator is SNC-Lavalin Inc., represented by:

Curtis Reimer  
Project Manager / Lead Automation Engineer  
SNC-Lavalin Inc.  
148 Nature Park Way, Winnipeg, MB, R3P 0X7  
curtis.reimer@snclavalin.com

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

D6.2 Bids Submissions must be submitted to the address in B7.9.

## **D7. RETURN OF GOODS**

- D7.1 Further to C9.8 to C9.13, Goods incorrectly supplied as a result of the Contractor's error shall be returned at the Contractor's cost.
- D7.2 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.
- D7.3 Further to C9.8 to C9.13, Goods incorrectly supplied as a result of the Installation Contractor's error will be returned at the Installation Contractor's cost.
- D7.4 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.
- D7.5 Where restocking fees apply, they shall not exceed 10%.

## **D8. CHANGES IN THE WORK**

- D8.1 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.
- D8.2 Changes shall be addressed in accordance with C7 of the General Conditions.
- D8.3 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.
- D8.4 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.
- D8.5 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. The Contractor shall clearly justify any price changes for the replacement product. The City reserves the right to negotiate the pricing for replacement products.
- D8.6 Where the price of the replacement product is determined 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.
- D8.7 Where the proposed replacement product(s) and/or pricing no longer meets the overall intent of the Contract, the City reserves the right to cancel the complete Contract or the applicable portion.

## **D9. INSPECTION**

- D9.1 Notwithstanding C9.1, the City does not intend to travel to the manufacturing facility to observe and inspect the Work. Should a factory visit be required, this would be considered a Change in the Work.

## **D10. INDEMNITY**

- D10.1 Further to C15.1, the Contractor shall save harmless and indemnify the City in the amount of five million dollars (\$5,000,000) against all costs, damages or expenses arising from the items identified in C15.1.



## **D11. NOTICES**

D11.1 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

## **D12. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE**

D12.1 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 Contractor's own use, or for the use of any third party.

D12.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.

D12.3 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.

D12.4 A Contractor who violates any provision of D12 may be determined to be in breach of Contract.

## **D13. FACILITY STANDARD**

D13.1 The electric valve actuators selected through this RFP process may be utilized as a facility standard for the wastewater treatment facilities.

## **SUBMISSIONS**

### **D14. AUTHORITY TO CARRY ON BUSINESS**

D14.1 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.

## **SCHEDULE OF WORK**

### **D15. COMMENCEMENT**

D15.1 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.

- D15.2 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 D14;
    - (ii) where applicable, evidence of the workers compensation coverage specified in C6.16;
  - (b) the Contractor has attended a meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a meeting.

**D16. DELIVERY**

- D16.1 Goods, consisting of up to ten (10) electric actuators, shall be delivered within one hundred-twenty (120) Calendar days, f.o.b. destination, freight prepaid to the destination indicated on the purchase order.
- (a) Allow fourteen (14) Calendar days for shop drawing reviews.
  - (b) Errors and omissions on the shop drawings that result in re-submittal of shop drawings and additional shop drawing reviews will not result in an extension of the delivery date.
- D16.2 All destinations may be assumed to be within the limits of the City of Winnipeg.
- D16.3 Notwithstanding D16.1 all Goods shall be delivered within the maximum timeframes indicated on Form P, or the timeframe indicated in D16.1 whichever is less.
- D16.4 The average of all deliveries within a given annual period determined by the Contract Administrator shall be within the average timeframe indicated on Form P.
- D16.5 Where purchase orders exceed ten (10) electric actuators, the first ten (10) actuators shall be delivered as per D16.1, D16.3, and D16.4. Additional actuators shall be delivered within an additional seven (7) Calendar days for each group of ten (10).
- D16.5.1 For example, if the maximum delivery timeframe proposed on Form P is 120 days, and a purchase order is issued for 35 actuators, the goods shall be delivered within the following timeframe:
- (a) First ten (10) actuators (1-10): 120 Calendar days
  - (b) Next ten (10) actuators (11-20): 127 Calendar days
  - (c) Next ten (10) actuators (21-30): 134 Calendar days
  - (d) Last five (5) actuators (31-35): 141 Calendar days
- D16.6 The Contractor shall off-load Goods as directed at the delivery location.
- D16.7 Where Goods are ordered directly by the City, the following shall apply:
- D16.7.1 The Contractor shall confirm each delivery with the Contract Administrator or his/her designate, at least two (2) Business Days before delivery.
  - D16.7.2 Goods shall be delivered between 8:00 a.m. and 3:30 p.m. on Business Days.

## MEASUREMENT AND PAYMENT

### D17. INVOICES – CITY ORDERED GOODS

- D17.1 Where the City directly orders Goods under this Contract, the following shall apply.
- D17.2 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](mailto:CityWpgAP@winnipeg.ca)
- D17.3 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.
  - (g) The person placing the order.
- D17.4 The Goods delivered and associated amounts payable must be clearly itemized and priced in a manner to allow the City to verify that the proposed pricing and terms of the Contract are being adhered to.
- D17.5 The City will bear no responsibility for delays in approval of invoices which are, in the opinion of the Contract Administrator, improperly submitted.
- D17.6 Bids Submissions must be submitted to the address in B7.9.

### D18. PAYMENT – CITY ORDERED GOODS

- 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 – INSTALLATION CONTRACTOR ORDERED GOODS

- D19.1 Payment for Goods ordered by the Installation Contractor will be made by the Installation Contractor.
- D19.2 The price shall be based upon the price under this Contract in effect at the time of order.

### D20. PAYMENT SCHEDULE

- D20.1 Further to C10, payment shall be in Canadian funds net thirty (30) Calendar Days after receipt and approval of the Contractor's invoice.
- D20.2 Payment will not be made until the Goods are delivered.
- D20.3 All payments shall include price adjustments in accordance with Form N.

D20.4 Payment for Form B, Item 12, On-Site Training Session – Operations and Basic Maintenance and Form B, Item 13, On-Site Training Session – Detailed Configuration and Service will be made on a per session basis.

- (a) In the event that the quality of training provided does not, in the opinion of the Contract Administrator, meet the specifications and the requirements of the City, the payment may be reduced to reflect the quality of training provided.

D20.5 Payment for Form B, Item 14 shall be based upon the lesser of:

- (a) The value in Form B, Item 14; or
- (b) \$150/hour.

## **D21. PROVISION OF AUDIT SERVICES**

D21.1 Upon request by the Contract Administrator, the Contractor shall supply the following:

- (a) A complete list of all orders placed and delivered under the Contract.
- (b) All invoices for Goods delivered under the Contract, including orders placed by the City or by an Installation Contractor.
- (c) Evidence that the prices invoiced are consistent with the terms of this Contract.

D21.2 In the event that it is determined that the price invoiced and paid for Goods exceeded the terms of the Contract, the Contractor shall pay the City the difference.

D21.2.1 Payment corrections shall apply to both the Goods ordered by the City or an Installation Contractor.

## **WARRANTY**

### **D22. WARRANTY**

D22.1 Notwithstanding C11, the warranty period shall begin on the date of successful commissioning and expire one (1) year thereafter or as indicated on Form P, whichever is longer.

D22.2 In the event that the commissioning of the goods is not initiated within six (6) months of delivery, the warranty period shall begin on the date six (6) months from the date of delivery.

D22.3 In the event that the Contractor proposed a warranty period on Form P that is longer than two years, the warranty period may begin on the date of delivery, if so proposed by the Contractor.

## **PART E - SPECIFICATIONS**

### **GENERAL**

#### **E1. CRITICAL TECHNICAL QUALIFICATIONS**

- E1.1 All electric actuators specified shall be from a single manufacturer.
- E1.2 All actuators must support PROFIBUS DP or PA communication capability, without installation of any external modules.
- E1.3 The actuator manufacturer shall supply actuators to any Installation Contractor or valve manufacturer/vendor engaged by the City.
- E1.4 The manufacturer shall have standard electric actuator offerings available for all the applications referenced on Form B.
- E1.5 The electric actuators shall have an absolute position encoder.
- E1.6 The product line shall have hazardous Class I, Zone/Div 1 ratings as an option or standard feature.
- E1.7 The product line shall have a low ambient temperature rating to -40 degrees C as an option or standard feature.
- E1.8 Have a solid-state motor control option available for modulating service.
- E1.9 All actuators specified shall be CSA certified or equivalent.

#### **E2. APPROVED MANUFACTURERS**

- E2.1 Approved manufacturers are:
  - (a) Auma
  - (b) Emerson (EIM)
  - (c) Flowserve (Limitorque)
  - (d) Rotork
- E2.2 Bidders are reminded that requests for approval of substitutes as an approved equal or an approved alternative shall be made in accordance with B6.

#### **E3. WORK BY OTHERS**

- E3.1 The installation of the valve actuator on the valve, as well as physical installation, will be by others.
- E3.2 The commissioning of the equipment will be by others, except as provided for by E19.

#### **E4. SUBMITTAL PROCEDURES**

- E4.1 Administrative
  - E4.1.1 Submit to Contract Administrator submittals listed for review in accordance with the Specifications, or as requested by the Contract Administrator.
  - E4.1.2 Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
  - E4.1.3 Do not proceed with Work affected by submittal until review is complete.

- E4.1.4 Present shop drawings, product data, samples and mock ups in SI Metric units.
- E4.1.5 Where items or information is not produced in SI Metric units converted values are acceptable.
- E4.1.6 Review submittals prior to submission to Contract Administrator. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- E4.1.7 Notify Contract Administrator, in writing at time of submission for review, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- E4.1.8 Contractor's responsibility for errors and omissions in submission is not relieved by Contract Administrator's review of submittals.
- E4.1.9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Contract Administrator review.
- E4.1.10 Acceptance of Shop Drawings for a component or a subassembly does not constitute acceptance of the complete assembly of which it is a part.
- E4.1.11 The Contractor shall make any corrections required by the Contract Administrator and shall resubmit the required number of corrected copies of Shop Drawings. The Contractor shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections requested by the Contract Administrator on previous submission.
- E4.1.12 After Contract Administrator's review and return of copies, distribute copies to Subcontractor as appropriate.
- E4.2 Shop Drawings and Product Data
  - E4.2.1 The Contractor shall arrange for the preparation of clearly identified Shop Drawings as specified or as the Contract Administrator may reasonably request. Shop Drawings are to clearly indicate materials, weights, dimensions, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of the Work. Where articles or equipment attach or connect to other articles or equipment, clearly indicate that all such attachments and connections have been properly coordinated, regardless of the trade under which the adjacent articles or equipment will be supplied and installed. Shop Drawings are to indicate their relationship to design Drawings and Specifications. Notify the Contract Administrator in writing of any deviations in Shop Drawings from the requirements of the Contract Documents.
  - E4.2.2 Have Shop Drawings stamped, signed and dated by a Professional Engineer Licensed to practice in the Province of Manitoba where required in the Specifications or by the Contract Administrator.
  - E4.2.3 The Contractor shall examine all Shop Drawings prior to submission to the Contract Administrator to ensure that all necessary requirements have been determined and verified and that each Shop Drawing has been checked and coordinated with the requirements of the Work and the Contract Documents. Examination of each Shop Drawing shall be indicated by stamp, date and signature of a responsible person of the Subcontractor for supplied items and of the General Contractor for fabricated items. Shop Drawings not stamped, signed and dated will be returned without being reviewed and stamped "Re-submit". Ensure that the following are verified:
  - E4.2.4 Submit shop drawings in a native text-searchable electronic PDF copy (not scanned).
  - E4.2.5 Shop Drawing reviews by the Contract Administrator is solely to ascertain conformance with the general design concept. Responsibility for approval of detail design inherent in Shop Drawings rests with the Contractor and review by the Contract Administrator shall not imply such approval.

- E4.2.6 After submittals are stamped "REVIEWED", "NO EXCEPTIONS TAKEN", "MAKE NOTED CORRECTIONS" or "REVIEWED AS MODIFIED", no further revisions are permitted unless re-submitted to the Contract Administrator for further review.
- E4.2.7 Any adjustments made on Shop Drawings by the Contract Administrator are not intended to change the Contract Price. If it is deemed that such adjustments affect the Contract Price, clearly state as such in writing prior to proceeding with fabrication and installation of Work. Any changes to the Shop Drawings shall not affect the delivery time as per D14.
- E4.2.8 Make changes in Shop Drawings, which the Contract Administrator may require, consistent with Contract Documents. When re-submitting, notify the Contract Administrator in writing of any revisions other than those requested by the Contract Administrator.
- E4.2.9 Show the following information in lower right hand corner of shop drawings.
- (a) Project Title.
  - (b) Tender number or other project number assigned by the Contract Administrator.
  - (c) Name of the depicted item in accordance with the Specifications and Drawings.
  - (d) Project series number and location where the item is used if applicable.
  - (e) Specification section number if applicable
  - (f) Proposed option if applicable.
  - (g) Name of Contractor.

## **E5. PRODUCT LIFECYCLE GUARANTEE**

- E5.1 The manufacturer shall have no plans to remove the proposed electric actuator series from active sale and/or production within the next five years.
- E5.2 The manufacturer shall provide guarantee that the electric valve actuators will be operable, maintainable and fully supported by the manufacturer, including availability of spare parts, for a period of at least five (5) from the date that any of the proposed products are removed from active sale.
- E5.3 The desired requirement for the electric valve actuator lifecycle guarantee is:
- (a) Provide guarantee that the electric valve actuators will be operable, maintainable and fully supported by the manufacturer, including availability of spare parts, for a period of at least twenty (20) years from the date that any of the proposed products are removed from active sale.

## **E6. DESIGN ASSISTANCE**

- E6.1 Provide over the life of the Contract, qualified design engineers and technicians to aid the City in the selection and application of valve actuators within this Contract.
- E6.2 The design assistance shall also be provided to third-party design engineers working on projects for the City.
- E6.3 The design assistance shall include, but not be limited to:
- (a) Provision of free telephone and e-mail support to design engineers.
  - (b) Provision of standard product guides to guide the City and its design consultants in the selection and configuration of the products.
  - (c) Review of documents produced by application design engineers for compliance with manufacturer recommended design guidelines and to ensure their adequacy to meet the requirements of the given application. Identify any issues or suggestions to improve the design.
  - (d) Provision of equipment documentation, tech notes, application guides, and other documentation useful during the design process.

E6.4 Measurement and Payment

- (a) The provision of design assistance services shall be incidental to the Contract, and no payment will be made.

**E7. VALVE INTEGRATION ASSISTANCE**

E7.1 The Bidder shall, over the life of the Contract, provide qualified design engineers and technicians to review the integration of valves with the valve actuators.

E7.2 The review provided by the Bidder shall be for the purpose of ascertaining conformance of the actuator application with the given valve. The responsibility for integration of the valve with the valve actuator shall remain with the valve manufacturer / supplier.

E7.3 The bidder shall make all applicable actuator shop drawings and datasheets available to others to allow for integration of the valve with the valve actuator.

E7.4 In the event that the valve cannot directly attach to a standard base available for the electric actuator, supply and installation of valve adaptors between the actuator base and the valve will be the responsibility of others.

E7.5 Measurement and Payment

- (a) The provision of valve integration services shall be incidental to the Contract, and no payment will be made.

**E8. ELECTRIC VALVE ACTUATOR GENERAL REQUIREMENTS**

E8.1 General Requirements

E8.1.1 The actuators shall be suitable for use on a nominal 600 volt, 3 phase, 60 Hz power supply and are to incorporate motor, integral reversing starter, local control facilities and terminals for remote control and indication connections housed within a self contained, sealed enclosure.

E8.1.2 The actuator enclosure shall be non-intrusive, such that all configuration, local control, and maintenance may be performed without the removal of any actuator covers or components. This shall include, but not be limited to:

- (a) Setting of the torque levels.
- (b) Setting the position limits.
- (c) Configuration of the indication contacts.

E8.1.3 The actuator shall ensure that the motor runs with the correct rotation for the required direction of valve travel irrespective of the connection sequence of the power supply.

E8.1.4 No failsafe position is required unless specifically noted in the detailed valve specifications or data sheet.

E8.1.5 Each actuator shall be capable of operating in any horizontal or vertical orientation.

E8.2 References

E8.2.1 All equipment supplied shall conform to all relevant National Regulations, local Codes and Regulations, including the Standards listed below. The following list is not necessarily inclusive of all applicable Decrees, Regulations, Codes and Standards.

- (a) ANSI/AWWA C542-09, Electric Motor Actuators for Valves and Slide Gates
- (b) CAN/CSA-C22.2 No. 30-M1986(R2012) – Explosion –Proof Enclosures for Use in Class I Hazardous Locations
- (c) CAN/CSA C22.2 No. 157-92(R2012) – Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations
- (d) EN15714-2 Electric actuators for industrial valves – Basic requirements



- (e) IEC 60034-1 Rotating electric machines – Part 1: Rating and performance
- (f) ISA SP96.02 Guidelines for the Specification of Electric Valve Actuators
- (g) ISO 5210, Industrial Valves - Multi-turn valve actuator attachments
- (h) ISO 5211 , Industrial Valves -Part-turn valve actuator attachments
- (i) MSS SP101 Part-turn valve actuator attachment – Flange and Driving Component Dimensions and Performance Characteristics
- (j) MSS SP102 Multi-turn valve actuator attachment– Flange and Driving Component Dimensions and Performance Characteristics

### E8.3 Environmental

E8.3.1 Application: Wastewater treatment.

E8.3.2 Actuators shall be suitable for indoor and outdoor use. Actuators located indoors shall be capable of functioning in an ambient temperature ranging from 0°C (32°F) to 40°C (104°F), up to 100% relative humidity. Actuators located outdoors shall be capable of functioning in an ambient temperature ranging from -40°C (-40°F) to 40°C (104°F), up to 100% relative humidity.

E8.3.3 Actuators for hazardous area applications shall meet the area classification, gas group and surface temperature requirements specified and may include any of the following hazardous areas:

- (a) Class I, Div 1, Group C & D.
- (b) Class I, Zone 1 Group IIA & IIB.
- (c) Class II, Groups E, F & G, T4.

E8.3.4 Where applicable actuators shall be certified to Canadian Standards Association (CSA) standard C22.2 No. 30 – M1986(R2012) – Explosion-Proof Enclosures for Use in Class 1 Hazardous Locations.

E8.3.5 All components of the actuator drive train shall be designed with adequate heat capacity for the actuator being operated at the specified motor duty cycle, travel times and torque requirements.

E8.3.6 Materials must be corrosion-resistant and compatible with the environmental conditions of the given application.

### E8.4 Enclosure

E8.4.1 Actuators shall be O-ring sealed, watertight to IP68, submersible to 7 m for 72 hours, NEMA 4, 4X and 6.

E8.4.2 The terminal compartment should be sealed from the remainder of the actuator, including the motor and all other internal electrical elements of the actuator. When the terminal compartment cover is removed, the ingress protection rating between the terminal compartment and the remainder of the actuator should be equivalent to a NEMA 4 rating.

E8.4.3 Enclosure must allow for temporary site storage without the need for electrical supply connection.

E8.4.4 All external fasteners shall be stainless steel.

E8.4.5 Painting and Corrosion Protection

- (a) Actuators should be corrosion protected with a primer coating and a two layer powder coating consisting of an epoxy coating and a polyurethane top coating with a total film thickness of at least 140 µm.

E8.4.6 Wiring Compartment

- (a) The wiring compartment shall be suitably sized for the connection of the power, control, and communication wiring.
- (b) Each actuator shall provide an adequately sized internal and external connection for grounding.
- (c) All electrical conduit connections shall be imperial National Pipe Thread (NPT).

E8.4.7 Desired Features:

- (a) Enclosure material: Cast aluminum.
- (b) Removable field terminals (Plug and socket)

E8.5 Motor

E8.5.1 The motors shall be suitable for a 3-phase power supply.

E8.5.2 Motors shall be totally enclosed, non-ventilated.

E8.5.3 The motor shall be an integral part of the actuator, designed specifically for valve actuator applications. It shall be a low inertia high torque design, class F insulated with a class B temperature rise.

E8.5.4 The minimum motor rating that be determined at a motor temperature of 40°C(104°F) and shall be:

- (a) For non-modulating multi-turn applications, the motor duty rating shall be rated for the higher of:
  - (i) The specific application requirements specified; or
  - (ii) 15 minutes per hour (25% duty) at 30% of the rated actuator torque.
- (b) For non-modulating quarter-turn applications, the motor duty rating shall be rated for the higher of:
  - (i) The specific application requirements specified; or
  - (ii) 15 minutes per hour (25% duty) at 30% of the rated actuator torque.
- (c) For modulating, multi-turn applications, the motor duty rating shall be rated for the higher of:
  - (i) The specific application requirements specified; or
  - (ii) 25% duty at 30% of the rated actuator torque.
- (d) For modulating, quarter-turn applications, the motor duty rating shall be rated for the higher of:
  - (i) The specific application requirements specified; or
  - (ii) 25% duty at 30% of the rated actuator torque.

E8.5.5 Temperature shall be limited by thermostats embedded in the motor end windings and integrated into its control.

E8.5.6 Electrical and mechanical disconnection of the motor should be possible without draining the lubricant from the actuator gearcase.

## E8.6 Design Life

E8.6.1 Actuators shall be designed for industrial use.

E8.6.2 Desired Design Life:

- (a) For non-modulating multi-turn applications, the design life of the actuator should be:
  - (i) 1,000,000 output turns
- (b) For non-modulating quarter-turn applications, the design life of the actuator should be:
  - (i) 20,000 operating cycles (open-close-open).
- (c) For modulating, multi-turn applications, the design life of the actuator should be:
  - (i) 2,500,000 starts.
- (d) For modulating, quarter-turn applications, the design life of the actuator should be:
  - (i) 2,500,000 starts.

## E8.7 Anti-Condensation Heaters

E8.7.1 Anti-condensation heaters shall be provided for all actuators, unless specifically indicated as not required within the specific actuator specifications or data sheet.

E8.7.2 The power for anti-condensation heaters should be supplied by the integral power supply.

E8.7.3 The actuator should provide an alarm signal in the event the anti-condensation heater fails.

## E8.8 Motor Protection

E8.8.1 Protection shall be provided for the motor as follows:

- (a) Stall - the motor shall be de-energized within 10 seconds in the event of a stall when attempting to unseat a jammed valve.
- (b) Over temperature - thermostat will cause tripping of the motor. Auto-reset on cooling.
- (c) Single phasing - lost phase protection.
- (d) Direction – phase rotation correction.

## E8.9 Bearings and Gears

E8.9.1 If the actuator is shipped without lubricant then each actuator shall be tagged to this effect.

E8.9.2 Lubrication between general overhauls shall not be required.

E8.9.3 All drive gearing and components must be of metal construction. The actuator gear mechanism may have a lost motion hammer blow effect.

E8.9.4 For rising spindle valves the output shaft shall be hollow to accept a rising stem, and incorporate thrust bearings of the ball or roller type at the base of the actuator.

E8.9.5 The design should be such as to permit the opening of the gearcase for inspection or disassembled without releasing the stem thrust or taking the valve out of service.

E8.9.6 For quarter-turn applications, the drive gearing shall be self-locking to prevent the valve back-driving the actuator.

E8.9.7 Worm-wheels shall be made of bronze material.

## E8.10 Hand Operation.

E8.10.1 A handwheel shall be provided for emergency operation, engaged when the motor is declutched by a lever or similar means.

E8.10.2 The actuator handwheel shall be automatically disengaged and the drive restored to electrical operation automatically by starting the motor.

E8.10.3 The lever shall be padlockable in either the handwheel or motor operation mode.

E8.10.4 The handwheel or selection lever shall not move on restoration of motor drive.

- E8.10.5 Provision shall be made for the local/remote selection lever to be locked in both local and remote positions. It should be possible to select local operation while the actuator is running or start the actuator motor while the local/remote selection lever is locked in local without damage to the drive train.
- E8.10.6 Clockwise operation of the handwheel shall give closing movement of the valve unless otherwise stated. An arrow indicating the direction of rotation to close the valve shall be permanently engraved on the handwheel.
- E8.10.7 For linear valve types the actuator handwheel drive must be mechanically independent of the motor drive and should be such as to permit valve operation in a reasonable time with a manual force not exceeding 200N through stroke and 400N for seating/unseating of the valve.
- E8.11 Drive Bushing
- E8.11.1 The actuator shall be furnished with a drive bushing easily detachable for machining to suit the valve stem or gearbox input shaft. Normally the drive bushing shall be positioned in a detachable base of the actuator. Thrust bearings shall be sealed for life and the base shall be capable of withstanding five times the rated thrust of the actuator.
- E8.11.2 Machine the drive bushing as required for the specific application.
- E8.12 Noise Level
- E8.12.1 The noise level of the actuators should not exceed 75 dB(A) at 1 m.
- E8.13 Position Measurement
- E8.13.1 Position measurement shall be via an absolute position encoder.  
(a) Potentiometers are not acceptable.
- E8.13.2 Encoder Resolution
- (a) Multi-Turn
- (i) Desired: to 5 degrees of actuator output.
  - (ii) Minimum range: 10 to 5,000 turns.
  - (iii) Desired range: 1 to 10,000 turns.
- (b) Quarter Turn:
- (i) Desired: to 0.1 degrees of actuator output.
  - (ii) Desired range: 90° +/- 10°
- E8.14 Torque Measurement
- E8.14.1 Torque measurement shall be provided for all actuators.
- E8.14.2 Desired feature:
- (a) Measurement of torque shall be from direct measurement of force at the output of the actuator. Methods of determining torque-using data derived from the motor such as motor speed, current and flux etc are not preferred.
- E8.14.3 A means for automatic "torque switch bypass" to inhibit torque off during valve unseating and "latching" to prevent torque switch hammer under maintained or repeated control signals shall be provided.
- E8.14.4 Torque settings to be adjustable as follows:
- (a) Torque setting: 40% to 100% rated torque.
  - (b) Separate torque settings for each direction (open/close).

#### E8.15 Integral Motor Controls

- E8.15.1 Integral motor controls shall be provided within the actuator. The motor controls shall either be solid state or via electromechanical contactor, as per the application requirements.
- E8.15.2 The electromechanical reversing contactors shall be mechanically and electrically interlocked to prevent simultaneous energizing of the open and closed contactors. The control module shall also include a means to inhibit rapid motor reversals.
- E8.15.3 Reversing electromechanical contactor shall at minimum be rated 60 motor starts per hour, or higher as per application requirements.
- E8.15.4 Solid state reversing contactors should be electrically interlocked and be available for high rate modulating service and rated for minimum of 1200 starts per hour.

#### E8.16 Integral Control Transformer

- E8.16.1 Provide an integral control transformer with the valve actuator, suitably housed to prevent breathing and condensation. The control supply transformer shall be fed from two of the incoming three phases and incorporate overload protection. It shall be adequately rated to provide power for all internal functions, including:
- (a) Energization of the motor controller / contactor coils.
  - (b) 24V DC output for remote controls.
  - (c) Supply for all the internal electrical circuits.

#### E8.17 Local Indication and Control

- E8.17.1 The actuator display shall include a dedicated numeric/symbol digital position indicator displaying valve position from fully open to fully closed in 1% increments. Valve closed and open positions shall be indicated by clear symbols showing valve position in relation to the pipework to ensure that valve status is clearly interpreted. With main power on the display shall be backlit to enhance contrast at low light levels and shall be legible from a distance of at least 2m.
- E8.17.2 The digital display shall be capable of indicating real time torque and valve position simultaneously, both being displayed in 1% increments of valve position and actuator rated torque. In addition torque shall also be displayed in horizontal bar graph form.
- E8.17.3 Desired Feature:
- (a) A battery option to allow the display to remain available when main power is not available.
- E8.17.4 Desired features:
- (a) Indicating lights, independent of the LCD display, corresponding to open, closed, and intermediate valve positions.
  - (b) The color of the status lights is preferred to be:
    - (i) Open = Green
    - (ii) Closed = White
    - (iii) Intermediate = Blue
    - (iv) Fault = Red
- E8.17.5 In addition, the actuator display shall include a separate text display element with a minimum of 32 characters to display operational, alarm and configuration status. The text display shall be English. Provision shall be made to upload a different language without removal of any covers or using specialized tools not provided as standard with the actuator.
- E8.17.6 The detailed status of the PROFIBUS communication shall be indicated on the graphic display.

- E8.17.7 The actuator shall incorporate local controls for Open, Close and Stop and a Local/Stop/Remote mode selector switch lockable in any one of the following three positions: local control only, stop (no electrical operation), remote control plus local stop only. It shall be possible to select maintained or non-maintained local control.
- E8.17.8 The local controls shall be arranged so that the direction of valve travel can be reversed without the necessity of stopping the actuator.
- E8.17.9 Provision shall be made to field orientate the local controls through increments of 90° to suit the valve and actuator orientation.
- E8.18 Communication Capability
- E8.18.1 Actuator shall be capable of PROFIBUS DP V1 or PROFIBUS DP V2 communication.
- (a) Where a PROFIBUS DP V2 communication capability is offered by the manufacturer, it shall be provided as part of the proposal rather than a DP V1 interface.
  - (b) PROFIBUS DP V0 is not acceptable.
  - (c) Configurable communication speeds between 9.6 kbit/s and 1500 kbit/s:
- E8.18.2 Desired Feature:
- (a) Optional PROFIBUS PA communication capability.
- E8.18.3 The PROFIBUS fieldbus interface shall provide a fully configurable data arrangement for cyclic input data to DCS in order to support an utmost efficient data transfer.
- E8.18.4 All relevant signals shall be available over the PROFIBUS communication interface, including but not limited to:
- (a) valve position (%)
  - (b) Local / Off remote selector switch position
  - (c) Torque
  - (d) Failure
  - (e) Warning / Maintenance Required.
- E8.18.5 Complete control of the actuator, including open, close, and positioning capability, shall be provided via the PROFIBUS interface.
- E8.18.6 It must be possible to set the bus address at the actuator via the actuator local controls and LCD display.
- E8.18.7 Actuator behaviour in case of bus communication failure must be programmable (fail as is, fail open, fail close, fail to preset position and also fail to the last command received).
- E8.18.8 Provide GSD and FDT/DTM files for all actuators, at no additional charge.
- E8.19 Remote Status Contacts
- E8.19.1 A minimum of four status contacts shall be provided for all actuators, in addition to any communication capability specified.
- E8.19.2 Desired feature:
- (a) Additional fixed and/or optional status contacts.
- E8.19.3 Desired feature:
- (a) All status contacts shall be Form C.
- E8.19.4 Contacts shall maintain and update position indication during handwheel operation when all external power to the actuator is isolated.
- E8.19.5 The contacts shall be rated at a minimum of 0.5A, 120 VAC, 30 VDC.
- (a) Desired feature: Contacts to be rated at 5A, 250V AC, 30V DC.

- E8.19.6 The valve actuator shall be capable of indicating the following via fixed and/or configurable status contacts:
- (a) Valve closed position.
  - (b) Valve open position.
  - (c) Remote selected
  - (d) Actuator Fail/Alarm.
- E8.20 Remote Control
- E8.20.1 The necessary control, wiring and terminals shall be provided in the actuator for the following functions:
- E8.20.2 Open and close external interlocks to inhibit local and remote valve opening and/or closing control. It shall be possible to configure the interlocks to be active in remote control only.
- E8.20.3 Remote controls fed from an internal or external 24V DC or 120 VAC supply, to be suitable for any one or more of the following methods of control:
- (a) Open, Close and Stop control.
  - (b) Open and Close maintained or "push to run" (inching) control.
  - (c) Overriding Emergency Shut-down to Close (or Open) valve from a normally closed or open contact.
  - (d) Two-wire control, energise to close (or open), de-energise to open (or close).
- E8.20.4 Desired feature:
- (a) Option for 24 VDC and 120 VAC control.
- E8.20.5 It shall be possible to reverse valve travel without the necessity of stopping the actuator. The motor starter shall be protected from excessive current surges during rapid travel reversal.
- E8.20.6 The internal circuits associated with the remote control and monitoring functions are to be isolated from the remote control and monitoring interface and designed to withstand simulated lightning impulses of up to 2kV.
- E8.21 Monitoring facilities - Facilities shall be provided for monitoring actuator operation and availability as follows:
- E8.21.1 Actuator text display indication of the following status/alarms:
- (a) Closed Limit, open limit, moving open, moving closed, stopped
  - (b) Torque trip closing, torque trip opening, stalled
  - (c) ESD active, interlock active
  - (d) Thermostat trip, phase lost, 24V supply lost, Local control failure
  - (e) Configuration error, Position sensor failure, Torque sensor failure
  - (f) Battery low, power loss inhibit

## E8.22 Data Logger

E8.22.1 The actuator shall contain an integral data logger to record and store the following operational data:

- (a) Opening last /average torque against position
- (b) Closing last /average torque against position
- (c) Opening motor starts against position
- (d) Closing motor starts against position
- (e) Total open/closed operations
- (f) Maximum recorded opening and closing torque values
- (g) Event recorder logging operational conditions (valve, control and actuator)

E8.22.2 The data logger shall record relevant time and date information for stored data.

E8.22.3 Data logger data is to be accessed via the local display, Bluetooth, and via the PROFIBUS communication interface. The software provided shall be suitable for displaying the data logger information.

- (a) Infrared communication may be utilized as an alternate to Bluetooth communication.

## E8.23 Wiring and terminals

E8.23.1 Internal wiring shall be tropical grade PVC insulated stranded cable of appropriate size for the control and 3-phase power. Each wire shall be clearly identified at each end.

E8.23.2 The terminals shall be embedded in a terminal block of high tracking resistance compound.

E8.23.3 The terminal compartment shall be separated from the inner electrical components of the actuator by means of a watertight seal and shall be provided with a minimum of 3 threaded cable entries with provision for up to 4 threaded conduit entries.

E8.23.4 All wiring supplied as part of the actuator to be contained within the main enclosure for physical and environmental protection. External conduit connections between components are not acceptable.

E8.23.5 A durable terminal identification card showing plan of terminals shall be provided attached to the inside of the terminal box cover indicating:

- (a) External voltage values
- (b) Wiring diagram number
- (c) Terminal layout

## E8.24 Configuration

E8.24.1 The configuration of the actuator shall be protected by a configurable password, or equivalent means.

## E8.25 Factory Testing

E8.25.1 Each actuator shall be factory tested.

E8.25.2 Each actuator must be performance tested and individual test certificates shall be supplied at no additional charge. The test equipment should simulate a typical valve load, and the following parameters should be recorded.

- (a) Current at maximum torque setting
- (b) Torque at max. torque setting
- (c) Insulation resistance test voltage
- (d) Actuator output speed or operating time.



- E8.25.3 In addition, the test certificate should record details of specification such as gear ratios for both manual and automatic and second stage gearing if provided, drive closing direction, wiring diagram number.
- E8.26 Documentation
- E8.26.1 Documentation to be provided with each actuator shall include, but not be limited to the following:
- (a) Installation manual.
  - (b) Operation manual.
  - (c) Electrical wiring diagram.
  - (d) Technical datasheet including motor data.
  - (e) Performance test certificate.
- E8.27 Additional materials
- E8.27.1 Provide sufficient cover seals and any other materials to make good any site losses during the commissioning period.
- E8.28 Actuator Sizing
- E8.28.1 The actuator shall be sized to guarantee valve operation for the specified application. The safety margin of motor power available for seating and unseating the valve shall be sufficient to ensure that the torque switch trip at maximum valve torque with the supply voltage 10% below nominal.
- E8.28.2 In the event that a safety factor is not specified, a minimum 25% safety factor should be applied to the most demanding valve operating criteria.
- E8.29 Spare Parts
- E8.29.1 All spare parts required for the repair of all common actuator failures shall be available from a warehouse within Canada or the United States.

## **E9. ELECTRIC ACTUATOR - TYPE 1, MULTI-TURN, ON/OFF DUTY**

E9.1 Provide a multi-turn valve actuator, in accordance with E8, with the following features:

- (a) The actuator specified is a prototype actuator to be utilized for the purpose of responding to this RFP only. The actuators to be supplied must be provided to the individual specifications of the given application.

E9.2 Application Requirements:

- (a) Valve Type: Gate
- (b) Size: 300 mm
- (c) Turns to operate: 39
- (d) Duty Cycle: On/Off, 15 min / hour, 30 starts per hour
- (e) Operating Speed: 30 cm / min
- (f) ASME Class: 150 lb
- (g) Stem Diameter at point of attachment: 38 mm
- (h) Stem Configuration: Non-rising
- (i) Max Allowable Stem Torque: 917 Nm
- (j) Seating/unseating Torque:
  - (i) Without Safety Factor: 305 Nm
  - (ii) With Safety Factor:  $x 1.3 = 397$  Nm
- (k) Average Dynamic/Running Torque: 119 Nm
- (l) Safety Factor: 1.3
- (m) Actuator Mounting: Direct

E9.3 Environmental:

- (a) Ambient Temperature: 0°C - 40°C
- (b) Location: Indoor
- (c) Electrical Classification: Class I, Div 2 Group D or Class I, Zone 2, Group IIA
- (d) Enclosure: NEMA 4X / NEMA 6 / IP68

E9.4 Electrical Requirements:

E9.4.1 Supply Voltage:

- (a) Acceptable Voltages (in order of preference):
  - (i) 575V, 3Ø, 60 Hz
  - (ii) 200V, 3Ø, 60 Hz
  - (iii) 208V, 3Ø, 60 Hz
  - (iv) 115/120V, 1Ø, 60 Hz

E9.4.2 Motor Control:

- (a) Acceptable means of motor control
  - (i) Solid state motor control
  - (ii) Reversing electromechanical contactor

E9.4.3 Failsafe: not required

E9.5 Local Control Requirements:

- (a) Integrated Position / Torque Display
- (b) Local / Off / Remote switch
- (c) Open / Close / Stop pushbuttons

E9.6 Network Connectivity

E9.6.1 PROFIBUS DP, non-redundant.

**E10. ELECTRIC ACTUATOR - TYPE 2, MULTI-TURN, ON/OFF DUTY**

E10.1 Provide a multi-turn valve actuator, in accordance with E8, with the following features:

- (a) The actuator specified is a prototype actuator to be utilized for the purpose of responding to this RFP only. The actuators to be supplied must be provided to the individual specifications of the given application.

E10.2 Application Requirements:

- (a) Valve Type: Sluice Gate
- (b) Size: 1200 mm x 1200 mm
- (c) Turns to operate: 192
- (d) Duty Cycle: On/Off, 15 min / hour, 30 starts per hour
- (e) Operating Speed: 30 cm / min
- (f) Stem Diameter at point of attachment: 65 mm
- (g) Stem Configuration: Rising stem
- (h) Pitch, number of thread starts : 6.4 mm , 1 thread start
- (i) Weight of gate and stem: 5200 kg
- (j) Max Allowable Stem Thrust: 250 kN
- (k) Seating/unseating Thrust:
  - (i) Without Safety Factor: 99.0 kN
  - (ii) With Safety Factor: x 2.0 = 198 kN
- (l) Average Dynamic/Running Thrust: 55.0 kN
- (m) Safety Factor: 2.0
- (n) Actuator Mounting: Direct or gearbox

E10.3 Environmental:

- (a) Ambient Temperature: -40°C to 40°C
- (b) Location: Outdoor
- (c) Electrical Classification: Non-hazardous
- (d) Enclosure: NEMA 4X / NEMA 6 / IP68

E10.4 Electrical Requirements:

E10.4.1 Supply Voltage:

- (a) Acceptable Voltages:
  - (i) 575V, 3Ø, 60 Hz

E10.4.2 Motor Control:

- (a) Acceptable means of motor control
  - (i) Solid state motor control
  - (ii) Reversing electromechanical contactor

E10.4.3 Failsafe: not required

- E10.5 Local Control Requirements:
- (a) Integrated Position / Torque Display
  - (b) Local / Off / Remote switch
  - (c) Open / Close / Stop pushbuttons

E10.6 Network Connectivity

- E10.6.1 PROFIBUS DP, non-redundant.

**E11. ELECTRIC ACTUATOR - TYPE 3, MULTI-TURN, MODULATING**

E11.1 Provide a multi-turn valve actuator, in accordance with E8, with the following features:

- (a) The actuator specified is a prototype actuator to be utilized for the purpose of responding to this RFP only. The actuators to be supplied must be provided to the individual specifications of the given application.

E11.2 Application Requirements:

- (a) Valve Type: Gate
- (b) Size: 300 mm
- (c) Turns to operate: 39
- (d) Duty Cycle: Modulating, 1200 starts / hour, 25% duty
- (e) Operating Speed: 30 cm / min
- (f) ASME Class: 150 lb
- (g) Stem Diameter at point of attachment: 38 mm
- (h) Stem Configuration: Non-rising
- (i) Max Allowable Stem Torque: 917 Nm
- (j) Seating/unseating Torque:
  - (i) Without Safety Factor: 305 Nm
  - (ii) With Safety Factor:  $x 1.3 = 397 \text{ Nm}$
- (k) Average Dynamic/Running Torque: 119 Nm
- (l) Safety Factor: 1.3
- (m) Actuator Mounting: Direct

E11.3 Environmental:

- (a) Ambient Temperature: 0°C - 40°C
- (b) Location: Indoor
- (c) Electrical Classification: Class I, Div 2 Group D or Class I, Zone 2, Group IIA
- (d) Enclosure: NEMA 4X / NEMA 6 / IP68

E11.4 Electrical Requirements:

E11.4.1 Supply Voltage:

- (a) Acceptable Voltages (in order of preference):
  - (i) 575V, 3Ø, 60 Hz
  - (ii) 200/208V, 3Ø, 60 Hz
  - (iii) 115/120V, 1Ø, 60 Hz

- E11.4.2 Motor Control:
- (a) Acceptable means of motor control (in order of preference)
    - (i) Solid state motor control
    - (ii) Reversing electromechanical contactor
  - (b) Preferred Configuration:
    - (i) 200/208V, 3Ø, 60 Hz supply voltage with solid state motor control is preferred over a 575V, 3Ø, 60 Hz supply voltage with a reversing electromechanical contactor.

E11.4.3 Failsafe: not required

E11.5 Local Control Requirements:

- (a) Integrated Position / Torque Display
- (b) Local / Off / Remote switch
- (c) Open / Close / Stop pushbuttons

E11.6 Network Connectivity

E11.6.1 PROFIBUS DP, non-redundant.

## **E12. ELECTRIC ACTUATOR - TYPE 4, MULTI-TURN, MODULATING**

E12.1 Provide a multi-turn valve actuator, in accordance with E8, with the following features:

- (a) The actuator specified is a prototype actuator to be utilized for the purpose of responding to this RFP only. The actuators to be supplied must be provided to the individual specifications of the given application.

E12.2 Application Requirements:

- (a) Valve Type: Sluice Gate
- (b) Size: 1200 mm x 1200 mm
- (c) Turns to operate: 192
- (d) Duty Cycle: Modulating, 600 starts / hour, 25% duty
- (e) Operating Speed: 30 cm / min
- (f) Stem Diameter at point of attachment: 65 mm
- (g) Stem Configuration: Rising stem
- (h) Pitch, number of thread starts : 6.4 mm , 1 thread start
- (i) Weight of gate and stem: 5200 kg
- (j) Max Allowable Stem Thrust: 250 kN
- (k) Seating/unseating Thrust:
  - (i) Without Safety Factor: 99.0 kN
  - (ii) With Safety Factor: x 2.0 = 198 kN
- (l) Average Dynamic/Running Thrust: 55.0 kN
- (m) Safety Factor: 2.0
- (n) Actuator Mounting: Direct or gearbox

E12.3 Environmental:

- (a) Ambient Temperature: -40°C to 40°C
- (b) Location: Outdoor
- (c) Electrical Classification: Non-hazardous
- (d) Enclosure: NEMA 4X / NEMA 6 / IP68

E12.4 Electrical Requirements:

E12.4.1 Supply Voltage:

- (a) Acceptable Voltages:
  - (i) 575V, 3Ø, 60 Hz

E12.4.2 Motor Control:

- (a) Acceptable means of motor control (in order of preference)
  - (i) Solid state motor control
  - (ii) Reversing electromechanical contactor

E12.4.3 Failsafe: not required

E12.5 Local Control Requirements:

- (a) Integrated Position / Torque Display
- (b) Local / Off / Remote switch
- (c) Open / Close / Stop pushbuttons

E12.6 Network Connectivity

E12.6.1 PROFIBUS DP, non-redundant.

**E13. ELECTRIC ACTUATOR - TYPE 5, QUARTER-TURN, ON/OFF DUTY**

E13.1 Provide a multi-turn valve actuator, in accordance with E8, with the following features:

- (a) The actuator specified is a prototype actuator to be utilized for the purpose of responding to this RFP only. The actuators to be supplied must be provided to the individual specifications of the given application.

E13.2 Application Requirements:

- (a) Valve Type: Eccentric Plug
- (b) Size: 150 mm
- (c) Turns to operate: 1/4
- (d) Duty Cycle: On/Off, 15 min / hour, 60 starts per hour
- (e) Stroke time: ~30 seconds
- (f) ASME Class: 150 lb
- (g) Stem Diameter at point of attachment: 38 mm
- (h) Max Allowable Stem Torque: 1750 Nm
- (i) Seating/unseating Torque:
  - (i) Without Safety Factor: 352 Nm
  - (ii) With Safety Factor:  $x 1.5 = 528 \text{ Nm}$
- (j) Average Dynamic/Running Torque: 137 Nm
- (k) Safety Factor: 1.5
- (l) Actuator Mounting: Direct

E13.3 Environmental:

- (a) Ambient Temperature: 0°C - 40°C
- (b) Location: Indoor
- (c) Electrical Classification: Class I, Div 2 Group D or Class I, Zone 2, Group IIA
- (d) Enclosure: NEMA 4X / NEMA 6 / IP68

**E13.4 Electrical Requirements:**

**E13.4.1 Supply Voltage:**

- (a) Acceptable Voltages (in order of preference):
  - (i) 575V, 3Ø, 60 Hz
  - (ii) 200/208V, 3Ø, 60 Hz
  - (iii) 115/120V, 1Ø, 60 Hz

**E13.4.2 Motor Control:**

- (a) Acceptable means of motor control
  - (i) Solid state motor control
  - (ii) Reversing electromechanical contactor

**E13.5 Local Control Requirements:**

- (a) Integrated Position / Torque Display
- (b) Local / Off / Remote switch
- (c) Open / Close / Stop pushbuttons

**E13.6 Network Connectivity**

**E13.6.1 PROFIBUS DP, non-redundant.**

**E14. ELECTRIC ACTUATOR - TYPE 6, QUARTER-TURN, ON/OFF DUTY**

**E14.1 Provide a multi-turn valve actuator, in accordance with E8, with the following features:**

- (a) The actuator specified is a prototype actuator to be utilized for the purpose of responding to this RFP only. The actuators to be supplied must be provided to the individual specifications of the given application.

**E14.2 Application Requirements:**

- (a) Valve Type: Butterfly
- (b) Size: 600 mm
- (c) Turns to operate: 1/4
- (d) Duty Cycle: On/Off, 15 min. / hour, 15 starts / hour
- (e) Stroke time: Approx. 120 seconds
- (f) ASME Class: 150 lb
- (g) Stem Diameter at point of attachment: 65 mm
- (h) Max Allowable Stem Torque: 7400 Nm
- (i) Seating/unseating Torque:
  - (i) Without Safety Factor: 2450 Nm
  - (ii) With Safety Factor:  $x 1.5 = 3675$  Nm
- (j) Average Dynamic/Running Torque: 915 Nm
- (k) Safety Factor: 1.5
- (l) Actuator Mounting: Multi-turn actuator with gearbox

**E14.3 Environmental:**

- (a) Ambient Temperature: 0°C - 40°C
- (b) Location: Indoor
- (c) Electrical Classification: Class I, Div 2 Group D or Class I, Zone 2, Group IIA
- (d) Enclosure: NEMA 4X / NEMA 6 / IP68

E14.4 Electrical Requirements:

E14.4.1 Supply Voltage:

- (a) Acceptable Voltages:
  - (i) 575V, 3Ø, 60 Hz

E14.4.2 Motor Control:

- (a) Acceptable means of motor control
  - (i) Solid state motor control
  - (ii) Reversing electromechanical contactor

E14.4.3 Failsafe: not required

E14.5 Local Control Requirements:

- (a) Integrated Position / Torque Display
- (b) Local / Off / Remote switch
- (c) Open / Close / Stop pushbuttons

E14.6 Network Connectivity

E14.6.1 PROFIBUS DP, non-redundant.

**E15. ELECTRIC ACTUATOR - TYPE 7, QUARTER-TURN, MODULATING**

E15.1 Provide a multi-turn valve actuator, in accordance with E8, with the following features:

- (a) The actuator specified is a prototype actuator to be utilized for the purpose of responding to this RFP only. The actuators to be supplied must be provided to the individual specifications of the given application.

E15.2 Application Requirements:

- (a) Valve Type: Butterfly
- (b) Size: 150 mm
- (c) Turns to operate: 1/4
- (d) Duty Cycle: Modulating, 1200 starts / hour, 50% duty
- (e) Stroke time: Approx. 30 seconds
- (f) ASME Class: 150 lb
- (g) Stem Diameter at point of attachment: 22 mm
- (h) Max Allowable Stem Torque: 1500 Nm
- (i) Seating/unseating Torque:
  - (i) Without Safety Factor: 155 Nm
  - (ii) With Safety Factor:  $x 1.5 = 233 \text{ Nm}$
- (j) Average Dynamic/Running Torque: 58 Nm
- (k) Safety Factor: 1.5
- (l) Actuator Mounting: Direct

E15.3 Environmental:

- (a) Ambient Temperature: 0°C - 40°C
- (b) Location: Indoor
- (c) Electrical Classification: Class I, Div 2 Group D or Class I, Zone 2, Group IIA
- (d) Enclosure: NEMA 4X / NEMA 6 / IP68



E15.4 Electrical Requirements:

E15.4.1 Supply Voltage:

(a) Acceptable Voltages (in order of preference):

- (i) 575V, 3Ø, 60 Hz
- (ii) 200/208V, 3Ø, 60 Hz
- (iii) 115/120V, 1Ø, 60 Hz

E15.4.2 Motor Control:

(a) Acceptable means of motor control (in order of preference)

- (i) Solid state motor control
- (ii) Reversing electromechanical contactor

(b) Preferred Configuration:

- (i) 200/208V, 3Ø, 60 Hz supply voltage with solid state motor control is preferred over a 575V, 3Ø, 60 Hz supply voltage with a reversing electromechanical contactor.

E15.5 Local Control Requirements:

- (a) Integrated Position / Torque Display
- (b) Local / Off / Remote switch
- (c) Open / Close / Stop pushbuttons

E15.6 Network Connectivity

E15.6.1 PROFIBUS DP, non-redundant.

**E16. ELECTRIC ACTUATOR - TYPE 8, QUARTER-TURN, MODULATING**

E16.1 Provide a multi-turn valve actuator, in accordance with E8, with the following features:

- (a) The actuator specified is a prototype actuator to be utilized for the purpose of responding to this RFP only. The actuators to be supplied must be provided to the individual specifications of the given application.

E16.2 Application Requirements:

- (a) Valve Type: Butterfly
- (b) Size: 600 mm
- (c) Turns to operate: 1/4
- (d) Duty Cycle: Modulating, 600 starts / hour, 33% duty
- (e) Stroke time: Approx. 120 seconds
- (f) ASME Class: 150 lb
- (g) Stem Diameter at point of attachment: 65 mm
- (h) Max Allowable Stem Torque: 7400 Nm
- (i) Seating/unseating Torque:
  - (i) Without Safety Factor: 2450 Nm
  - (ii) With Safety Factor:  $x 1.5 = 3675$  Nm
- (j) Average Dynamic/Running Torque: 915 Nm
- (k) Safety Factor: 1.5
- (l) Actuator Mounting: Multi-turn actuator with gearbox

**E16.3 Environmental:**

- (a) Ambient Temperature: 0°C - 40°C
- (b) Location: Indoor
- (c) Electrical Classification: Class I, Div 2 Group D or Class I, Zone 2, Group IIA
- (d) Enclosure: NEMA 4X / NEMA 6 / IP68

**E16.4 Electrical Requirements:**

**E16.4.1 Supply Voltage:**

- (a) Acceptable Voltages:
  - (i) 575V, 3Ø, 60 Hz

**E16.4.2 Motor Control:**

- (a) Acceptable means of motor control (in order of preference)
  - (i) Solid state motor control
  - (ii) Reversing electromechanical contactor

**E16.4.3 Failsafe: not required**

**E16.5 Local Control Requirements:**

- (a) Integrated Position / Torque Display
- (b) Local / Off / Remote switch
- (c) Open / Close / Stop pushbuttons

**E16.6 Network Connectivity**

**E16.6.1 PROFIBUS DP, non-redundant.**

**E17. FIELD SETUP AND COMMISSIONING TOOL – HARDWARE**

E17.1 Where available as part of the manufacturer's product offering, provide an intrinsically-safe tool to be utilized to setup and configure the electric actuators.

E17.1.1 Refer to B9.8 for pricing in the event that a hardware tool is not proposed.

E17.2 Tool to communicate to the actuator via Bluetooth or Infrared communication.

**E17.3 Approvals:**

- (a) CAN/CSA-C22.2 NO. 157-92 (R2006)

E17.4 Provision of a laptop computer, handheld computer, or smartphone is not required.

**E18. FIELD SETUP AND COMMISSIONING TOOL – SOFTWARE**

E18.1 Provide a complete set of all software tools utilized to setup and licence the electric actuators.

E18.1.1 If different software is required for the various types of electric actuators, then provide one licence for each type required, within each software set.

E18.1.2 All licences shall be permanent and not expire.

E18.2 The software shall run on a Windows based laptop computer and communicate wirelessly to the electric actuator.

## **E19. FIELD SETUP AND COMMISSIONING OF ACTUATOR**

E19.1 Provide a factory-trained field service technician to perform field setup and commissioning services for an electric actuator.

(a) This service shall be provided on an as-requested basis.

E19.2 The services provided are to include at all standard manufacturer recommended start-up and commissioning procedures, as well as the following:

E19.2.1 Visual Inspection

- (a) Inspect equipment for signs of damage.
- (b) Verify mechanical installation per drawings.
- (c) Inspect electrical terminal compartment for foreign objects.

E19.2.2 Mechanical Inspection

- (a) Check all bolts for tightness and to the correct torque.
- (b) Check for alignment.
- (c) Ensure appropriate clearances for all connecting bushings and connecting faces.

E19.2.3 Electrical Inspection

- (a) Check all power wiring connections for tightness.
- (b) Check all fuses for continuity.
- (c) Confirm input voltage and phase rotation is correct.
- (d) Confirm that the control / fieldbus connections are correct.

E19.2.4 Start-up Services

- (a) Coordinate turning on power to the actuator.
- (b) Perform functional tests.
- (c) Coordinate with City personnel and designated representatives to confirm and finalize the application requirements.
- (d) Configure and document all settings, as appropriate for the application.
- (e) Perform test runs.
- (f) Verify that all configuration values are in the correct state.
- (g) Transfer the configuration settings to on-site personnel.

E19.2.5 Training

- (a) Provide up to fifteen (15) minutes of training to personnel on site.

E19.2.6 Documentation

- (a) Provide a signed documented commissioning form for each actuator, in a format acceptable to the Contract Administrator.

E19.3 Travel

- (a) Provide all travel and accommodations at no additional cost.

E19.4 Personnel:

E19.4.1 Personnel shall be factory trained in the maintenance, configuration, and service of the proposed electric actuators.

E19.5 Responsibility of the Installation Contractor:

E19.5.1 It is the responsibility of the Installation Contractor to ensure that the installation of the actuator is complete and that the valve is ready to commission, as per the manufacturer's documented pre-commissioning checklist.

## **E20. ON-SITE TRAINING SESSION – OPERATION AND BASIC MAINTENANCE**

### **E20.1 Overview**

E20.1.1 Provide instruction to designated City personnel in the operation and basic maintenance of the electric actuators.

### **E20.2 Location**

E20.2.1 The location of the training will be in the City of Winnipeg, in a facility provided by the City.

### **E20.3 Travel**

(a) Provide all travel and accommodations at no additional cost.

### **E20.4 Submittals**

E20.4.1 Submittals to be in accordance with E4.

E20.4.2 Submit the names and qualifications of the proposed instructors.

E20.4.3 Submit training proposal complete with hour by hour schedule including brief overview of content of each training segment a minimum of 30 calendar days prior to the anticipated date of beginning of training.

### **E20.5 Quality Assurance**

E20.5.1 Provide competent instructors thoroughly familiar with all aspects of the electric actuators.

E20.5.2 The Contract Administrator may reject instructors it deems to not be qualified.

E20.5.3 In the event that the training provided is not satisfactory, reduction of payment as per D20.4(a) may be applied.

### **E20.6 Duration**

E20.6.1 The training shall consist of two - three and a half (3.5) hours sessions, excluding coffee breaks. Both sessions shall be in one day.

E20.6.2 Each day shall be assumed to be independent of other training days, and not necessarily aligned with other on-site work or training.

### **E20.7 Materials**

E20.7.1 Provide equipment, visual and audio aids, and materials.

E20.7.2 Supply manual for each trainee, describing in detail the information included in each training program.

### **E20.8 Attendees**

E20.8.1 The attendees are expected to include, but not be limited to:

- (a) Operations personnel.
- (b) Mechanical maintenance personnel.
- (c) Electrical and instrumentation maintenance personnel.

## E20.9 Content

- E20.9.1 Overview of the equipment.
- E20.9.2 Internal operation of the actuators.
- E20.9.3 Equipment operating training including:
  - (a) Local operation of the actuator
  - (b) Manual / handwheel operation.
  - (c) Remote operation.
  - (d) Operation via the remote configuration tool
- E20.9.4 Basic equipment maintenance training including:
  - (a) Basic diagnostics
  - (b) Basic troubleshooting
  - (c) Access to historical information and torque values
  - (d) Preventative maintenance

## **E21. ON-SITE TRAINING SESSION – DETAILED CONFIGURATION AND SERVICE**

### E21.1 Overview

- E21.1.1 Provide instruction to designated City personnel in the detailed setup, configuration, and service of the electric actuators.

### E21.2 Location

- E21.2.1 The location of the training will be in the City of Winnipeg, in a facility provided by the City.

### E21.3 Travel

- (a) Provide all travel, meals and accommodations at no additional cost.

### E21.4 Submittals

- E21.4.1 Submittals to be in accordance with E4.
- E21.4.2 Submit the names and qualifications of the proposed instructors.
- E21.4.3 Submit training proposal complete with hour by hour schedule including brief overview of content of each training segment a minimum of 30 calendar days prior to the anticipated date of beginning of training.

### E21.5 Quality Assurance

- E21.5.1 Provide competent instructors thoroughly familiar with all aspects of the electric actuators.
- E21.5.2 The Contract Administrator may reject instructors it deems to not be qualified.
- E21.5.3 In the event that the training provided is not satisfactory, reduction of payment as per D20.4(a) may be applied.

### E21.6 Duration

- E21.6.1 The training shall consist of two days, each seven (7) hour sessions, excluding lunch and coffee breaks. The session days shall be back-to-back.
- E21.6.2 Each session (2-days) shall be assumed to be independent of other training sessions, and not necessarily aligned with other on-site work or training.

## E21.7 Materials

- E21.7.1 Provide equipment, visual and audio aids, and materials.
- E21.7.2 Supply manual for each trainee, describing in detail the information included in each training program.

## E21.8 Attendees

- E21.8.1 The attendees are expected to include, but not be limited to:
  - (a) Mechanical maintenance personnel.
  - (b) Electrical and instrumentation maintenance personnel.

## E21.9 Content

- E21.9.1 Detailed overview of the equipment and its internal construction.
- E21.9.2 Equipment configuration training, including:
  - (a) Setup of the actuator parameters.
  - (b) Establishing communications.
  - (c) Setting torque limits and end limits.
- E21.9.3 Equipment maintenance training including:
  - (a) Detailed diagnostics
  - (b) Detailed troubleshooting
  - (c) Preventative maintenance
  - (d) Disassembly
  - (e) Replacement of modules
  - (f) Fieldbus diagnostics
- E21.9.4 Maintenance use of equipment configuration software, including:
  - (a) Basic operation of the software
  - (b) Connecting to electric actuators.
  - (c) Download and upload of the actuator configuration.
  - (d) Diagnostics and troubleshooting.

## **E22. FIELD SERVICE**

- E22.1 Provide on-site field service at an hourly rate, as requested by the City.
- E22.2 Provide on-site field service, on an as-requested basis, on the electric actuator installations. Field service shall not be applicable for warranty.
- E22.3 The rate provided for field service shall be all inclusive and include travel expenses, tools, shop supplies, etc.
- E22.4 The hourly rate for field service may apply to travel time from a location within Winnipeg to site, up to a maximum of one hour per visit.
- E22.5 Field service rates shall not apply to electric actuator set-up and commissioning services under E19.
- E22.6 Service Personnel:
  - E22.6.1 Service personnel shall be factory trained in the maintenance, configuration, and service of the proposed electric actuators.