

REQUEST FOR PROPOSAL FOR PROFESSIONAL CONSULTING SERVICES FOR SEWPCC UPGRADING/EXPANSION PROJECT

URGENT

PLEASE FORWARD THIS DOCUMENT TO WHOEVER IS IN POSSESSION OF THE REQUEST FOR PROPOSAL

ISSUED: November 23, 2012
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THIS ADDENDUM SHALL BE INCORPORATED INTO THE REQUEST FOR PROPOSAL AND SHALL FORM A PART OF THE CONTRACT DOCUMENTS

Template Version: Ar20120228

Please note the following and attached changes, corrections, additions, deletions, information and/or instructions in connection with the Request for Proposal, and be governed accordingly. Failure to acknowledge receipt of this Addendum in Paragraph 9 of Form A: Proposal may render your Proposal non-responsive.

PART B – BIDDING PROCEDURES

B2. SUBMISSION DEADLINE

Revise: B2.1 to read: The Submission Deadline is 4:00 p.m. Winnipeg time, January 31, 2013.

PART D – SUPPLEMENTAL CONDITIONS

D6. SCOPE OF SERVICES

D6.4 Preliminary Design

Add to: D6.4.4 Specific Consultant Services Requirements

- (l) Review in detail potential alternatives to upgrade the power system supply to the facility. Identify all new and existing loads, grouped by the proposed electrical distribution area. Prepare plan drawings and single line drawings for each alternative reviewed. Review the utility supply configuration of all alternatives in detail with Manitoba Hydro. Provide a Class 4 cost estimate for each alternative. Identify prospective fault currents and arc flash energies at all major distribution points for each alternative.
 - (i) Alternatives to review include, but are not limited to:
 - ◆ Installation of a customer owned medium voltage indoor distribution to feed the facility. Install new customer owned medium voltage transformers to feed various areas of the facility.
 - ◆ Installation of additional Manitoba Hydro 600V services. Size the service in a manner to minimize potential arc flash energies at the customer owned distribution.
 - (ii) At minimum, include the following:
 - ◆ A recommendation regarding the configuration of the proposed service(s).
 - ◆ The proposed voltage level(s) and method of power distribution on the site.
 - ◆ Single line drawings of the proposed distribution system.
 - ◆ A plan drawing indicating the space allocated to the utility services and major electrical rooms.
- (m) Review and make recommendations regarding the use of neutral grounding devices on any new distribution transformers and generators.

- (n) Ensure that all parts of the electrical distribution system have a 600V secondary selective Bank 1 / Bank 2 system in a manner consistent with the existing design. The implementation of a non-redundant 600V electrical distribution system is not permitted without specific approval from the City.
- (o) Perform a preliminary level review of the proposed electrical distribution arrangement, with respect to short circuit levels, selective coordination and expected Arc Flash values. Provide recommendations and the proposed methodology to achieve effective management of same during design.
- (p) Perform a preliminary level review of the expected electrical harmonics and associated mitigation requirements. Provide recommendations and the proposed methodology to achieve effective management of same during design.
- (q) Provide automatic power factor correction as required to maintain a plant power factor of 0.95 or above. Include the loads from the existing facility in the analysis and design. Make recommendations regarding the continued use of the existing power factor correction capacitors. Ensure that the power factor correction is designed appropriately for any potential harmonics.
- (r) The existing power supply to the UV Building is not redundant. Review and provide a recommended design for power supply to the UV Building that includes redundant power feeds and distribution. Review the recommendations with the City and implement the upgrades as directed.
- (s) Replace the existing plant auxiliary essential power system, based upon standby generator power, with a new essential power system. The existing plant auxiliary standby power system is based on a 85 kW standby generator that is known to require replacement and has no spare capacity.
 - (i) Review all existing and new loads, and identify loads to be placed on standby power. Include an analysis of ventilation loads that are recommended to be placed on standby power, based upon NFPA 820. Where loads will not be transferred under this project, allocate generator and distribution system capacity for transfer in the future. Existing loads to consider for connection to standby power include, but are not limited to:
 - ◆ G686-EF, G684-AHU, G688-EF, G682-AHU, G672-HWP, B686-EF
 - ◆ B688-EF, B684-AHU, B651-BLR, B652-BLR, B672-HWP, B674-HWP
 - ◆ B676-HWP, P682-AHU, P684-GP, P631-EF, P632-EF, P634-AHU
 - ◆ P636-EF, P638-EF, P672-HWP, S553-FWP, S692-EF, S683-AHU, S606-EF
 - (ii) Review and provide a recommendation regarding providing compressed air during power failures.
 - (iii) Review potential generator architectures, including multiple distributed generators, a single centralized generator, or a dual generator paralleled installation.
 - (iv) Completely upgrade the entire existing essential power system currently powered by the 85 kW generator. The scope of replacement includes the generator, transfer switch, and all associated electrical distribution. Provide power metering to meter all power drawn by the essential power system.
 - (v) Identify locations within the existing facility for the new essential power distribution infrastructure.
 - (vi) Provide a design that accommodates current and future load requirements.
 - (vii) Review the selective coordination and arc flash ratings of the system in detail and modify the design as required to ensure the highest practical level of availability, and reasonable arc flash levels.
 - (viii) Consider harmonics in the required generator sizing.
 - (ix) Review the proposed work with the City and implement the upgrades as directed.
- (t) For any changes made to the loads powered by the 1000 kW standby generator, review the impact of the load modifications and make recommendations regarding modifications to the associated standby generator system. Review with the City and implement the recommendations as directed.
- (u) The Primary Clarifier Tank area contains unclassified electrical equipment. Any electrical upgrades in this space are to be rated for a Class I, Zone 2 electrical installation, however comprehensive upgrade of all existing electrical equipment in this space is not within the scope of this project.

- (v) Propose a lighting control system to be implemented in all new facilities to reduce lighting energy costs. It is desired to implement a basic system to provide energy savings, while minimizing complexity.
- (w) Provide generator based emergency lighting for all new facilities. Minimize the use of unit battery-based emergency lighting.
- (x) Grounding
 - (i) Review the existing grounding installation at the SEWPCC facility.
 - (ii) Perform soil resistance tests to ensure that the grounding design is appropriate for the installation.
 - (iii) Provide appropriately designed ground electrodes to ensure a safe installation. Interconnect all grounding.
- (y) Building Power Interconnection
 - (i) The interconnection of independent buildings is to be via galleries or via concrete ductbank. The use of direct buried cables must be approved by the City, and would generally only be acceptable for less critical buildings.
- (z) Lightning Protection
 - (i) Review the requirement for lightning protection on all new structures.
 - (ii) Design and implement all required lightning protection.
- (aa) Fire Alarm System
 - (i) Extend the existing fire alarm system to all new and upgraded facilities.
- (bb) Existing Flushing Water System
 - (i) General overall replacement of the existing flushing water piping does not fall within the scope of the project. The Consultant shall review the condition and upgrade as warranted any components of the existing flushing water system required to feed project tie-ins to the existing system.
- (cc) Administrative Building
 - (i) The Consultant shall review Section 20 of the Stantec SEWPCC Upgrading/Expansion Conceptual Design Report with the City, investigate and update requirements as applicable, make action recommendations to the City and implement actions as directed.

D6.5 Detailed Design

Add to: D6.5.6 Specific Electrical Requirements

- (f) Provide a detailed short circuit, coordination and arc flash study during the design process, to ensure that the design is optimized. Ensure that all protective devices selectively coordinate to the greatest extent practical. All electrical distribution equipment where regular switching operations occur (for example, MCCs and panelboards) shall have a maximum arc flash rating of Category 2.
 - (i) Include a detailed analysis of ground fault coordination in the report and provide ground fault trip breakers as required to provide ground fault coordination. Review with the City the appropriate level of ground fault protection to be provided, without excessive costs.
- (g) Provide a harmonic analysis report during the design process. Provide harmonic mitigation measures as required in the design to meet IEEE 519 requirements at all major points within the electrical distribution system. The current and voltage harmonics at each 600V MCC shall meet the IEEE 519 requirements (as per Point of Common Coupling requirements).

SCHEDULE OF SERVICES

D10. COMMENCEMENT

Revise: D10.3 to read: The City intends to award this Contract by March 29, 2013.

D11. PROJECT MILESTONES

Revise: D11.1(d) to read: Project Commissioning complete by October 31, 2016.