Public Works and Government Services Canada

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Public Works and Government Services Canada
Telus Plaza North/Plaza Telus Nord
10025 Jasper Ave./10025 ave. Jaspe
5th floor/5e étage
Edmonton
Alberta
T5J 1S6
Bid Fax: (780) 497-3510

SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Public Works and Government Services Canada
Telus Plaza North/Plaza Telus Nord
10025 Jasper Ave./10025 ave Jasper
5th floor/5e étage
Edmonton
Alberta
T5J 1S6

Title - Sujet HVAC Control Systems	
Solicitation No. - N° de l'invitation EW038-141054/A	**Amendment No. - N° modif.** 002
Client Reference No. - N° de référence du client EW038-141054	**Date** 2013-09-27
GETS Reference No. - N° de référence de SEAG PW-$PWU-009-9945	
File No. - N° de dossier PWU-3-36159 (009)	**CCC No./N° CCC - FMS No./N° VME**
Solicitation Closes - L'invitation prend fin **at - à 02:00 PM** **on - le 2013-10-15**	**Time Zone** **Fuseau horaire** Mountain Daylight Saving Time MDT
F.O.B. - F.A.B. **Plant-Usine:** ☐ **Destination:** ☐ **Other-Autre:** ☐	
Address Enquiries to: - Adresser toutes questions à: Davyduke (RPC), Katherine	**Buyer Id - Id de l'acheteur** pwu009
Telephone No. - N° de téléphone (780) 497-3547 ( )	**FAX No. - N° de FAX** (780) 497-3510
Destination - of Goods, Services, and Construction: **Destination - des biens, services et construction:**	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	**Delivery Offered - Livraison proposée**
Vendor/Firm Name and Address **Raison sociale et adresse du fournisseur/de l'entrepreneur** **Telephone No. - N° de téléphone** **Facsimile No. - N° de télécopieur**	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) **Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)** **Signature**	**Date**

Canada

Reportez-vous au document en anglais pour la révision des spécifications

supprimer:

Date de clôture Octobre 2, 2013:

insérer:

Date de clôture 15 Octobre, 2013:

Supprimer:

SA06 DURÉE DES TRAVAUX

L'entrepreneur doit exécuter et compléter les travaux dans les huit (8) semaines à partir de l'avis de l'acceptation de l'offre.

Insérer:

SA06 DURÉE DES TRAVAUX

L'entrepreneur doit exécuter et compléter les travaux dans les seize (16) semaines à partir de l'avis de l'acceptation de l'offre.

Note: All changes to the specification are identified by **BOLD** and UNDERLINE.

PART 1 - GENERAL

1.1 GENERAL

.1 Section Includes:

.1 An overview of the existing system including the following:

.1 The control system equipment.

.2 The control system architecture.

.3 The mechanical operating equipment.

.4 The operational deficiencies.

.2 Identify the deliverables by the contractor to include but not be limited to the following:

.1 Provide and install a complete control system of hardware and software.

.2 Identify inoperable field devices including interface devices and provide replacement cost.

.3 Install replacement devices with interfaces required after approval by Departmental Representative.

.4 Identification for enhanced maintenance process.

.5 Fully commissioned.

.6 Maintenance Manuals.

1.2 SUPPORTING DOCUMENTS

.1 Appendix A – 1996 System Descriptions

.2 Appendix B – 1996 Shop Drawings

.3 Appendix C – Latest Schematics (to be verified)

1.3 EXISTING SYSTEM

.1 General Overview: **(Refer to Appendix A and B)**

.1 There are 4 buildings (C, E, M and P). The head end control equipment is located in Building M.

.2 The existing control system provides integrated control of 4 individual building located on the site of the Pe Sakastew Institution at Hobbema, Alberta. It consists of a Graphic HMI Main Control station which was connected to the other three structures through underground connectivity, but is now compromised. Each building in turn contains data gathering and delivering devices which are subsequently manipulated and stored at the control station.

.3 The bulk of the existing equipment was

installed in 1996 with some maintenance and operational upgrading. System components are manufactured by Barber Colman.

.2 Main Control Station (Bldg M)
.1 The Graphic software (situated in the UNC equipment)is BACnet compatible and graphically represents site configuration and equipment connected.
.2 There is a computer terminal interface connected to the UNC HMI device.

.3 Each Building (C,E,M and P)
.1 Contains appropriate control devices for the assist in the operation of specific mechanical equipment. **(Refer to Appendix C)**
.2 The field architecture now contains two communication protocols, ASD for the MZ II controllers and U-BUS for the MN devices.
.3 The mechanical equipment is identified in the schematics but primarily consists of Heating/Ventilating/Exhaust Units and Boiler Systems.
.4 Room sensors are of two types, most are non-adjustable.
.5 Note that the attached drawing E1 information may not match the site exactly because of modifications and must be verified on site prior to tender.

.4 Operational Anomalies:
.1 Global communication has been broken physically to Building 'C'.
.2 Global communication has also been lost among the other three buildings. The suggestion has indicated that the communications was hit by a lightning strike.
.3 Local building control was never available and could only be adjusted at the Main Control Station making controls vulnerable on linkage outage.
.4 The technology is now 17 years old and existing equipment is obsolete.

1.4 DEFINITIONS

.1 Point: may be logical or physical.
.1 Logical points: values calculated by system such as set points, totals, counts, derived corrections and may include, but not limited to result of and statements in CDL's.
.2 Physical points: inputs or outputs which have hardware wired to controllers which are measuring physical properties, or providing status conditions of contacts or relays which provide interaction with related equipment (stop, start) and valve or damper actuators.

.2 Point Object Type: points fall into following object types:
.1 AI (analog input).
.2 AO (analog output).
.3 DI (digital input).
.4 DO (digital output).
.5 Pulse inputs.

.3 Symbols and engineering unit abbreviations utilized in displays: to ANSI/ISA S5.5.
.1 Printouts: to ANSI/IEEE 260.1

1.5 SUBMITTALS

.1 Make submittals in accordance with Section 01.

.2 Quality Control:
.1 Provide equipment and material from manufacturer's regular production, CSA certified, manufactured to standard quoted plus additional specified requirements.
.2 Where CSA certified equipment is not available submit such equipment to inspection authorities for special inspection and approval before delivery to site.
.3 Submit proof of compliance to specified standards with shop drawings and product data in accordance with Section 01.
.4 For materials whose compliance with organizational standards/codes/specifications is not regulated by organization using its own listing or label as proof of compliance, furnish certificate stating that material complies with applicable referenced standard or specification.
.5 Permits and fees: in accordance with general conditions of contract.
.6 Submit certificate of acceptance from authority having jurisdiction to Departmental Representative.

1.6 QUALITY ASSURANCE

.1 Have local office within 100 km of project staffed by trained personnel capable of providing instruction, routine maintenance and emergency service on systems.

.2 Provide record of successful previous installations submitting tender showing experience with similar installations utilizing computer-based systems.

.3 Have access to local supplies of essential parts and provide 7 year guarantee of availability of spare parts after obsolescence.

.4 Ensure qualified supervisory personnel continuously direct and monitor Work and attend site meetings.

1.7 EXISTING CONTROL COMPONENTS

.1 Utilize existing control wiring, equipment and piping as needed, or provide new as deemed fit for the complete installation.

.2 Re-use field control devices that are usable in their original configuration provided that they conform to applicable codes, standards specifications.
.1 Do not modify original design of existing devices without written permission from Departmental Representative.
.2 Provide for new, properly designed device where re-usability of components is uncertain.

.3 Inspect and test existing devices intended for re-use and prior to installation of new devices.
.1 Furnish test report listing each component to be re-used and indicating whether it is in good order or requires repair by Departmental Representative.
.2 Failure to produce test report will constitute acceptance of existing devices by contractor.

.4 Non-functioning mechanical items:
.1 Replaced non-functioning devices after approval has been attained from the Departmental Representative.

PART 2 - PRODUCTS

2.1 EQUIPMENT

.1 **Deleted.**

.2 Portable HMI Terminal:
.1 BACnet compatible interface with independent built on site graphic representation of builings and control equipment configuration.
.2 Provides integrated control, supervision and network management solutions for network of LonWorks based, or BACnet controllers for building control.
.3 Be directly connected to the communication buss at any building.
.4 Each building to be representated by an individual graphic.

.3 BACnet Controllers:

.1 Field located complete units with Digital and Analog input and output capability.
.2 Quantity to provide termination of all field devices.
.3 All Main Controllers in each of the buildings is to contain HOA override switches as required with associated adjustable pot for analogue output and switches for digital outputs.

.4 Room Sensors and controllers:
.1 Room temperature sensor to suit existing room layouts and be upgraded to locally adjusted digital devices.
.2 Room controller be connected to communications buss for remote control by Main Control and portable HMI equipment.

.5 Communication Link:
.1 Confirm existing interconnecting building cabling for structure and continuity.

.6 **Outdoor Air Temperature Sensors (OAT):**
.1 Provide new OAT sensors for buildings 'P', 'C' and 'E' to ensure building system independence.

.7 **Additional Boiler in Building 'M':**
.1 Provide new control points to boiler that is not already connected to the existing control system.

PART 3 - EXECUTION

3.1 MANUFACTURER'S RECOMMENDATIONS

.1 Installation: to manufacturer's recommendations.

3.2 SEQUENCE OF PRIORITES

.1 Make all necessary **temporary** modifications to mechanical equipment and devices to provide shoulder season operation so as to buffer the weather related needs for heating while installation and completion of the control system is facilitated.
.2 Installation and initiation of the modified control system as identified herein.
.3 Ensure all equipment and devices associated with the controls installation are labeled legibly corresponding to their references in the maintenance documentation.
.4 Commissioning of the entire system including the replacement of in operable mechanical controlling devices.
.5 Provision of Maintenance Manuals.
.6 Provide warranty documentation.

.7 Provide a cost for ongoing maintenance of the control system.

3.3 SYSTEM ARCHITECTURE

.1 BACnet compatible system.
.2 One single software architecture.
.3 Independent stand alone architecture by building to facilitate trouble shooting and operational modifications on a local basis.
.4 **Deleted.**
.5 **Deleted.**

3.4 LABELLING

.1 Provide lamicoid labels for each control device and panel that corresponds to the information identified in the Maintenance Manuals and the software graphics.

3.5 COMMISSIONING

With the support of a Mechanical Contractor which is familiar with the 3 major H/V systems (York, Eng A, and Carrier complete the following: **(Refer to Appendix A for system description)**

.1 Arrange and pay for services of mechanical personnel during the process of commissioning and start-up of installation. Check, adjust, balance and calibrate components and instruct operating personnel.
.2 Verify point to point cable continuity.
.3 Verify correct device action.
.4 Verify each control operation as identified in the O&M manual mechanical equipment operational description.
.5 Verify that each building is able to be monitored and modified by both the Portable Station and the Main Station.
.6 With consultation with the Mechanical Contractor and the process above have non-functioning external mechanical components (ie valves and actuators) replaced to ensure complete operation of all systems.
.7 **Delete.**

3.6 TRAINING

.1 Requirements and procedures for training program, instructors and training materials, for building Control System Work.
.2 Provide equipment, visual and audio aids, and materials for classroom training.
.3 Supply manual for two trainees, describing in detail data included in each training program.
.1 Review contents of manual in detail to explain aspects of operation and maintenance (O&M)

3.7 MAINTENANCE

.1 Provide all appropriate data sheet, drawing and

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literature that is necessary to support operation of the control system.

.2 Provide schematic and wiring diagrams that correlate to the operation and function of the entire control system.

3.8 WARRANTY

.1 Provide 12 month warranty for all material and labour from the date of acceptance by the Departmental Representative.