NRC·CNRC

Addendum / Addenda

No./No
2

Project Description / Description de projet		
U66 Chiller Replacement.		
Solicitation No./N° de solicitation	Project No./N° de projet	W.O. No./N° d'ordre de travail
16-22146	5201	A1-006954-06-01
Departmental Representative / représentant ministériel		Date
Maurice Richard		February 20, 2017

Notice:	**Nota**:
This addendum shall form part of the tender documents and all conditions shall apply and be read in conjunction with the original plans and specifications.	Cet addenda fait partie intégrale des dossiers d'appel; toutes les conditions énoncées doivent être lues et appliquées en conjonction avec les plans et les devis originaux.

1 IT room 244 requires access at all time. Provide hoarding when working in that area to ensure room is always accessible.

2 Question submitted during tender:

Q: We have been asked to quote the mechanical equipment on U-66 Chiller Replacement. I have noticed the equipment has been named but I do not see any additional approved manufacturers. Is this an open specification or do we need to go for written approval prior to tender closing?

A: Yes, in cases where a specific make/model has been referenced in the specifications or on the drawings a formal request for equivalency must be submitted during the tender period as described in the specification. Submissions must respect the required by dates noted in the specification.

3 Rooms 154, 156 and adjacent corridor will be made available for a maximum duration of 6 weeks. Work in these spaces cannot begin until May 1, 2017. Stationary equipment within rooms 154 & 156 will need to be adequately protected during construction. NRC will remove mobile equipment such as furniture, chairs, computer workstations and shelving units. In room 154 NRC will remove rack mounted computer equipment and associated racks prior to work commencing.

4 One or both of the cooling tower louvres will need to be removed to remove the old cooling tower. There is an asbestos containing wall finish material beneath the EIFS. Follow standard asbestos precautionary measures if it is necessary to disturb the existing ACM beneath the EIFS. The extent of precautionary measures is fully dependant on the method the contractor chooses to use to remove the material. The consultant will be available during construction to review the options with the contractor.

5 Remove requirement for ceiling mounted return grilles in the ceiling of the 2nd floor offices and meeting rooms where the ceiling is being replaced. The existing return air openings (below the new ceiling) are to remain and re-instated with new return air grilles. Provide new return air grilles and connect to the new return air ductwork; Grilles to be similar to the following basis of design;

1. EH Price Model Louvered Face Return Grilles, 45 Deg deflection, ½" spacing, long blade in the horizontal position
2. Model No. 535 / N / S / A
3. Size to match return air ductwork indicated on drawings

6 Add the following perimeter heating control valve work to the scope of work:

a. The existing pneumatic control valves are to be demolished at each perimeter heating unit located on the 2nd floor within the area of work. Reconnect rads to heating water supply. These are located in the following rooms: 221, 225, 229, 230, 232, 233, 237, 238, 241, 242, 267, 268, 271, 272, 275, 276, 279.
b. The existing pneumatic tubing is to be demolished back to the nearest main line.
c. A new DDC temperature sensor and DDC hydronic control valve will be provided for each new perimeter heating unit (provided by Airtron), the contractor is to allow for installation of the temperature sensor and the control valve. New hydronic heating control valves are to be located in the ceiling space of the floor below. Contractor to allow for scaffolding as required.
d. Provide new insulation and jacketing to match existing
e. All control wiring to be installed in EMT conduit. Set-up and programming by controls contractor.
f. Patching and painting to be included in contractor's scope.
g. Refer to attached photos showing typical existing pneumatic control valves within perimeter heating unit and heating water supply pipes in the ceiling below.
h. Total quantity of control valves is 19.

7 Refer to attached typical photos of existing perimeter heating control valves and the ceiling spaces below.

8 Add the following new AHU heating system work to the scope of work:

a. Demolish the existing heating water supply and return piping that serves the heating coil of the existing AHU and the existing unit heater. Cap at main branch and keep for re-use.
b. Provide new heating water supply and return piping to feed the new heating coil in the new AHU. Provide a new isolation valves at the branch connection and heating control valve and hydronic specialities per the detail (typical coil detail attached) at the unit. Connect new piping to existing unit heater, complete with all hydronic specialties.
c. Provide new insulation and jacketing for the new heating piping to match existing.

9 Electrical drawings 5201-E05 and 5201-E06 call for the reuse of 5 fluorescent light fixtures in room 245 and the adjacent corridor. In their place provide 5 type A LED light fixtures.

10 Electrical drawings 5201-E05 and 5201-E06 call for the fluorescent light fixture outside the elevator to remain in place. Instead provide 1 type A LED light fixture. Switching to remain as-is.

11 Electrical drawings 5201-E05 and 5201-E06 call for the light switch in room 245 to remain in place. Instead install LED dimming switch specified in specifications section 26 27 26.

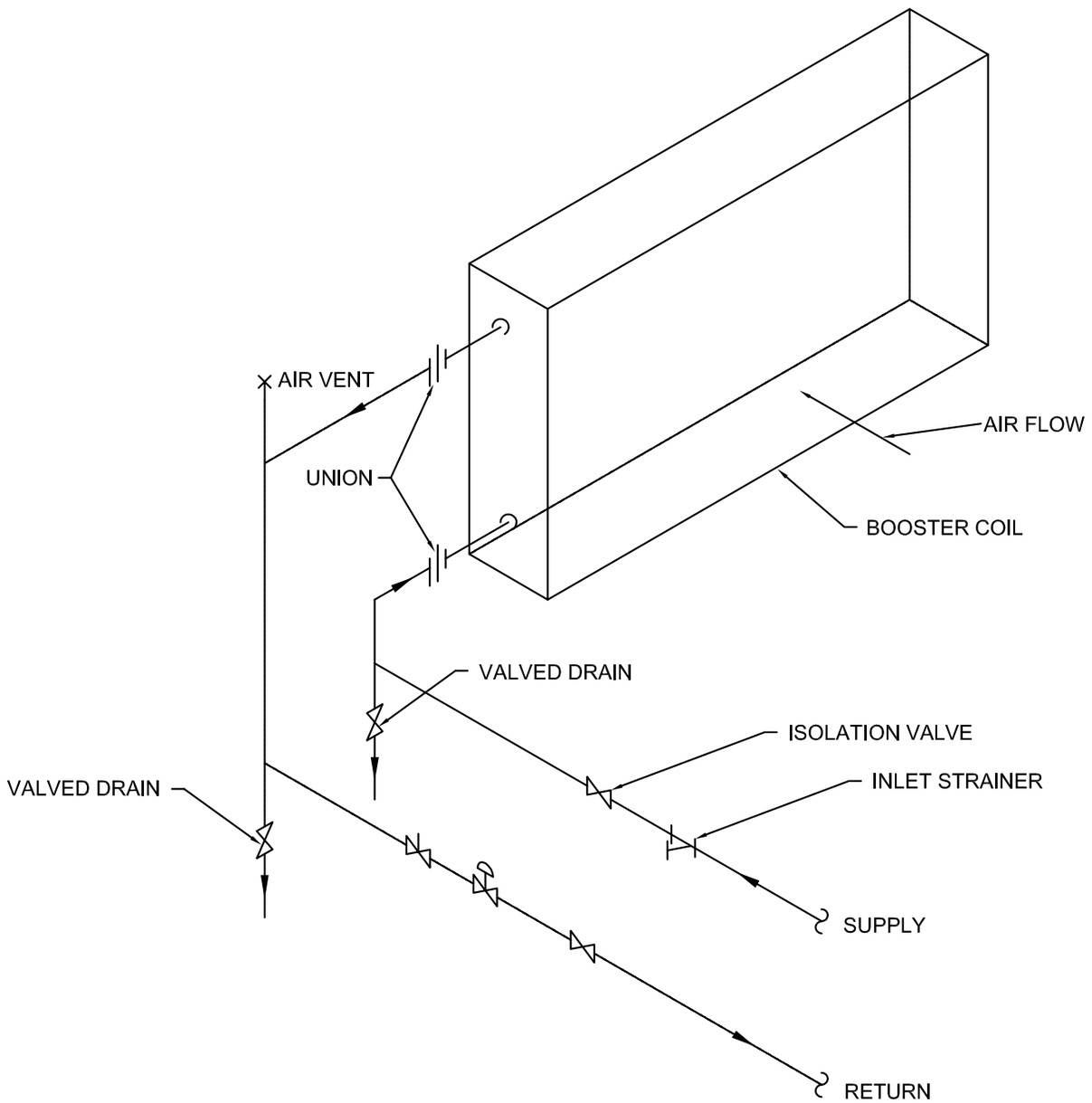
12 Electrical drawing 5201-E07 notes 3, 4, 5 call for the removal an re-installation of several pieces of electrical equipment to allow for the addition of a double door. The scope of work has changed to leave this door as-is and move the new AHU into the penthouse by creating an opening in the roof. Remove and re-install existing light fixture and associated conduit, and heat detector and associated conduit as necessary to allow roof opening for new AHU.

13 In rooms 154, 156 and the adjacent corridor there is a 610mm space above the existing Tbar ceiling.

14 Refer to attached quote for controls work by Airtron. Carry this cost as a cash allowance and submit final invoice from Airtron to confirm amount at project completion. Only actual amount billed by Airtron is to be paid out of this cash allowance, any remaining balance is to be credited back to NRC. Carry all profit and overhead costs associated with all Airtron work in your bid, regardless of the final cost by Airtron.

15 All control wires are to be in colour coded EMT conduit per specifications. Coordinate conduit supply/install with airtron to ensure all work is included in bid.

16 Attached are the attendance sheets from the 2 job showings.



NOTES:

1. ARRANGE PIPING & INSTALLATION OF VALVES SUCH THAT VALVES ARE GROUPED FOR EASY MAINTENANCE.
2. SUPPORT DUCTWORK ON EACH SIDE OF THE BOOSTER COIL.
3. PROVIDE ACCESS DOOR IN DUCT UPSTREAM OF COIL FOR CLEANING PURPOSES.

February 1, 2017

National Research Council Canada
1200 Montreal Road
Ottawa, Ontario
K1A 0R6

Attention: Derek Foot
Tel.: 613-991-4451
Email: Derek.foot@nrc-cnrc.gc.ca

Subject: ***NRC Building U-66 HVAC Equipment and Chiller Replacement – Section 25 EMCS***

We are hereby submitting our quotation to provide the EMCS for the above-mentioned project. Our quotation is based on mechanical drawings dated January 27, 2017 – issued for tender, mechanical specifications and our understanding of the scope of work and services. For a detailed scope of work, please see the following;

Scope of Work

- Demolition of existing EMCS controls.
- Supply and install (1) Andover BCX for integration of the following systems into the EMCS.
  - (5) BACnet MS/TP Pump VFDs
  - (4) BACnet MS/TP Fan VFDs
  - (1) BACnet MS/TP Chiller (commissioning, setup and programming of Chiller OEM controls by system manufacturer or representative)
- Supply and install power and network for all new Andover controllers.
- Supply and install (1) Local Control Panel c/w Andover field controllers in Basement Mechanical Room for control/monitoring of the following systems as per points list;
  - 66CCH01 Chiller
  - 66CWP01, 02, 03 Pump VFDs
  - 66CTP01, 02 Pump VFDs
  - 66HX Heat Exchanger
  - 66CTR Sump
  - Mechanical Room Ventilation System (66EF VFD, exhaust and outdoor motorized dampers)
  - Refrigerant Leak Detection System
- Supply and install (1) Local Control Panel c/w Andover field controllers in Penthouse Mechanical Room for control/monitoring of the following systems as per points list;
  - 66AHU1 Air Handling Unit
  - 66HUM1 Humidifier
  - 66CTR Cooling Tower
- Supply and install (1) Local Control Panel c/w Andover field controllers in Second Floor Room 257 for control/monitoring of the following systems as per points list;
  - 66FCU01 Fancoil Unit
- Supply and install (21) Andover VAV controllers (with integrated damper actuator and flow transducer) mounted in VAV box enclosures.
  - Interface VAV controllers to (19) perimeter heating control valves
- Supply and install (1) Refrigerant Leak Detection System c/w the following;
  - (1) Gas Detection Panel
  - (1) R-134a leak detection sensor
  - (1) Audible and Visual Annunciator (mounted exterior to Mechanical Room)
  - (1) Emergency Activation switch
- Supply and install the following end-devices, including the required power supplies;
  - (2) wet/wet differential pressure sensors
  - (9) immersion temperature thermistors
  - (1) space temperature thermistors
  - (21) space Andover smart sensors
  - (1) freeze stat
  - (2) duct humidity sensors
  - (4) duct temperature thermistors
  - (1) averaging duct temperature thermistor
  - (1) duct CO2 sensor
  - (6) duct pressure sensors
  - (1) combination outdoor air temperature/humidity/CO2 sensor
  - (4) motorized damper actuators (mechanical room ventilation system)
- Supply the following motorized control valves. Installation by others;
  - (8) free cooling changeover control valves

    - (1) heat exchanger control valve
    - (1) AHU heating control valve
    - (1) AHU cooling control valve
    - (1) FCU cooling control valve
    - (19) perimeter heating control valves
- Supply and install the following miscellaneous devices, associated low voltage wiring;
    - Humidifier air-flow proving switch, humidistat
- Update existing Operator Workstation graphics to reflect the changes made.
- Testing and commissioning of new EMCS points.
- Coordination of final sequence of operations with NRC Staff before implementation.
- Engineering shop drawings, as-built updates.

Items supplied by Airtron, installed by others

- (13) Immersion wells
- (31) Motorized control valves

Items supplied and installed by others

- Motorized dampers
- 66AHU1, 66FCU motorized dampers and actuators (with required actuator feedback)
- Electrical, gas, water meters
- VFDs with BACnet MS/TP interface
- Chiller BACnet MS/TP interface
- Cooling tower sump float switch, basin heater

Our Scope of Work includes installation, start-up and commissioning, engineering, graphics and project management.

Pricing;
We have established a total project cost of **$165,000.00 HST Extra (one hundred sixty five thousand dollars)** as per the above scope of work.

Particular notes;

All exposed wiring will be installed in pre-painted orange conduit for EMCS. Gas Detection System wiring will be installed in pre-painted purple conduit.

Bonding/ Building Permit / Builder's Risk Insurance is not included in our price.

General Liability Coverage until substantial completion is included in our price.

All work to be performed during regular working hours.

Installation as per NRC/Airtron established standards.

All new Customer's to Airtron Canada will be subject to credit approval and agree to 45 day payment terms from date of invoice.

Price is valid for a period of 30 days.

Training is included.

Should you have any questions or comments, please contact me.

Regards,
Airtron Canada

Aaron Dobson

Filename: NRC U-66 HVAC Equipment and Chiller Replacement Airtron EMCS Quote FEB 2017.pdf

Airtron Canada – Ottawa
100-2935 Conroy Road
Ottawa, ON K1G 6C6

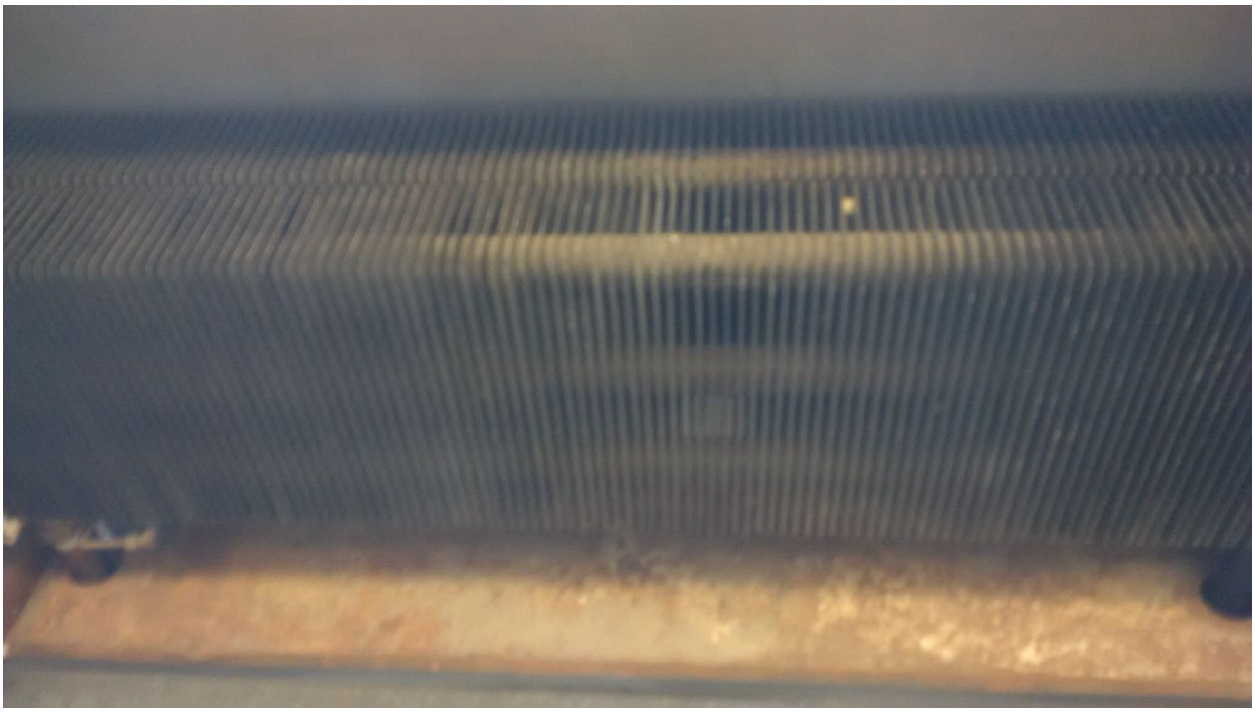
Tel: (613) 247-7938
Fax: (613) 247-7990
www.airtroncanada.com

NRC Chiller and HVAC replacement at U-66

Solicitation #12-22146

Addendum #2

Typical photos of existing perimeter heating & pneumatic control valves:




WERS
UCT NO.
RANGE
VOLTAGE

Typical photos of existing through the floor piping where new DDC hydronic control valves are to be installed.


HEATING WATER
RETURN


BUDGIT

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Mandatory Site Visit Attendance

Project Description / Description de projet				Closing Date	Closing time
U66 HVAC Equipment and Chiller Replacement				March 7, 2017	2:00 PM
Solicitation No./N° de solicitation	Project No./No de projet			1st Showing	Showing Time
16-22146	5201			February 14, 2017	
Departmental Representative / représentant	Signature	Alternate deadline	Question Deadline	2nd Showing	9:00 AM
Maurice Richard	14/02/2017	February 24, 2017	February 28, 2017	February 16, 2017	

COMPANY	NAME	SIGNATURE	PHONE	FAX	EMAIL
CLIMATS WORKS	STEVE MATS		613-838-9989		
Inflector Environmental	Patricia Dobson		613-798-8070	613-798-0908	patdobson@inflector.ca
Alliance	Marc Laliberté		613 8056272		Marc@allianceengineering.ca
Serge Timola Const.	Serge Timola		613-745-7872	613-745-8957	Serge@timolaconstruction.ca
Hydroplumb/x-L-air	Nicholas Keogh		613-836-~~8369~~ 5002	613-836-8369	NKeogh@Hydroplumb.ca

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COMPANY	NAME	SIGNATURE	PHONE	FAX	EMAIL
Blackland Mcdonald	Ben Bauer	Ben Bauer	613 818 6159		BBauer@blacklandmcdonald.com
Servant Electric	Cara Gauvreau	Cara Gauvreau	613-789-3535		Donald@electric.com
3V Mechanical	Allan Varve		613-526-4595	613-260-3540	Allan@3Vmechanical.ca
TP Crawford Ltd	Scott Crawford		613-822-7317	613-822-2317	scottcrawford@tpcrawford.ca
Modern Niagara	Jason Bourgeau		613-808-0622	613-591-7512	jbourgeau@modernniagara.com

National Research Council Canada / Conseil national de recherches Canada

Canada

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COMPANY	NAME	SIGNATURE	PHONE	FAX	EMAIL
TRAINOR MECHANICAL	DEAN KEOUGH		709-899-2404		dean.tramech@SHAW.CA
TRAINOR MECHANICAL	MURRAY MACKISHNIE		403-614-4300		murray.tramech@telus.net
Trainor Mechanical	Maurice West		250-551-9427	250-352-2557	WestMOE@telus.Net
SHABNAM Const. Ltd.	Medi Shabnam		613-265-6632	N/A	scl.Canada@Yahoo.ca
MECANIQUE FCI	PIERRE ESPEAD		819-213-4403		INFO@MECANIQUEFCI.COM
Asbyt LTD	Andrew Collins		613-338-1080	613-338-1014	andrew@asbyt.net
CAMM	A. CHARRON		6138800243		ANDREW@CAMM-MACHINERY.com
Remington Alliance	Andrew Bennett		613 812 1400		remington2124050@gmail.com
Taplen	Doug Lee	D Lee	6135212550		dlee@taplenconstruction.com

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COMPANY	NAME	SIGNATURE	PHONE	FAX	EMAIL
LADLAW MECHANICAL	Carole Laplante		613 830 7790	613 830 2710	CAROLELAPLANTE@ON.ALBN.COM
S.K. SHEET METAL LTD	ED KENZNON		613-748-7277	613 748 7532	EKENZNON@SKSHEETMETAL.CA
GS electric	Stephane Boudrias		613-551-0247	613-632-1495	sboudrias@gselectric.ca
Alliance	Brent Finlay		613-240-4629		brent@allianceengineering.ca
CLODAIR	CHARLES LAVERGNE		819-955-7577	819-772-9369	CLAVERGNE@CLODAIRVENTILATION.COM
PROFAB	Peter Chabursky		8197723962		Profab@Bellnet.ca
DONALCO	ED BRENNAN		613 216-7678	613 216 7679	edbrennan@donalcoottawa.com