

AMENDMENT # 2

ADDENDUM NO. 1

Cabot Tower Electrical Rehabilitation Upgrade – St John's, NL EA003-200139/A

THE FOLLOWING AMENDMENT TO THE TENDER DOCUMENTS IS EFFECTIVE IMMEDIATELY.
THE AMENDMENT SHALL FORM A PART OF THE CONTRACT DOCUMENTS.

ADDENDUM NO. 1

SPECIFICATIONS

1. In the Specifications, replace Section 26 13 18 Primary Switchgear and 5kV Disconnects with the attached revised Section 26 13 18.
2. In the Specifications, delete Section 29 09 23 Digital Metering entirely.

DRAWINGS

1. On Drawing E-04, Note 1 add "Repair all vertical surfaces of any block walls remaining after demolition."

QUESTIONS AND ANSWERS

Contractor questions from Bidders Site Visit:

1.Q: Who is responsible for the connection of the new conductors to the NAV Canada transformer.

1.A: The contractor shall assume they are responsible for the connection of the new conductors to the NAV Canada transformer.

2.Q: What are the dimensions for the concrete block wall in the Pumphouse to be demolished?

2.A: The wall dimensions are approximately 3.5 M long by 2.5 M high.

By submission of its tender, the Tenderer confirms that it has read and understands the requirements expressed in all addenda and has included all costs of these requirements in its Total Tender Amount.

All other terms & conditions remain unchanged.

PART 1 - GENERAL

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| <u>1.1 SHOP DRAWINGS
AND PRODUCT DATA</u> | .1 | Submit shop drawings and product data in accordance with Section 01 33 00 - Submittal Procedures. |
| | .2 | Indicate on shop drawings: <ul style="list-style-type: none">.1 Floor anchoring method and foundation template..2 Dimensioned cable entry and exit locations..3 Dimensioned position and size of bus..4 Overall length, height and depth..5 Dimensioned layout of internal and front panel mounted components. |
| | .3 | Include time-current characteristic curves for circuit breakers and fuses. |
| <u>1.2 REFERENCES</u> | .1 | Canadian Standards Association (CSA International): <ul style="list-style-type: none">.1 CAN/CSA C22.2 No. 31-14, Switchgear Assemblies..2 CSA C22.2 No.58 M1989-(R2015), High Voltage Isolating Switches..3 CSA G40.20/G40.21-13, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel. |
| | .2 | Electrical and Electronic Manufacturers' Association of Canada (EEMAC): <ul style="list-style-type: none">.1 EEMAC G1 1-1958, Indoor and Outdoor Switch and Bus Insulators..2 EEMAC G8 3.3, Metal Enclosed Interrupter Switchgear Assemblies. |
| | .3 | National Electrical Manufacturers Association (NEMA) |
| <u>1.3 MAINTENANCE
DATA</u> | .1 | Provide maintenance data for primary switchgear for incorporation into manual specified in Section 01 78 00 - Closeout Submittals |
| <u>1.4 MAINTENANCE
MATERIALS</u> | .1 | Include manufacturer recommended maintenance materials in accordance with Section 01 78 00 - Closeout Submittals. |
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PART 2 - PRODUCTS

2.1 PRIMARY SWITCHGEAR

- .1 Rating: 4160 V, 3 phase, 4 wire, amperage as indicated, short circuit rating as indicated. Series rating for short circuit rating equipment is not acceptable. Switchgear to be 100% rated for indicated ampacity.
 - .2 Metal enclosed free standing, floor mounted, dead front, tamper proof cubicle unit with utility metering compartment.
 - .3 Enclosure: NEMA 1.
 - .4 Cable entry to be top or from one side of line up only for all cells except cell feeding pumphouse transformer.
 - .5 Use non-corrosive bolts and hardware.
 - .6 Access from front only. Maximum assembled dimensions are 1.5m deep, 2.3m high for side entry with transition box or 1.7m high if direct top entry, and 3.5m long.
 - .7 Switchgear shopping sections must pass through doorway 1.950m high x 1.0m wide.
 - .8 100mm steel channel sills for base mounting.
 - .9 Full height outer doors, gasketed, hinges on left side, provision for multiple padlocking. Three point latch, stops, to open at least 135 degrees.
 - .10 Distribution fused sections with air or gas insulated switches.
 - .11 Switches to have visible operation of contacts to allow verification of disconnect.
 - .12 Bus bars and main connections: insulated tin-plated or silver flashed 99.3% copper.
 - .13 Identify bus bars with phase colour coding.
 - .14 Contractor to provide proposed switchgear arrangement with bid.
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2.2 5KV DISCONNECTS

- .1 Rating: 4160 V, 3 phase, 4 wire, amperage as indicated, short circuit rating as indicated. Series rating for short circuit rating equipment is not acceptable.
- .2 Metal enclosed free standing, floor mounted, dead front, tamper proof cubicle unit with utility metering compartment.
- .3 Enclosure: NEMA 1.
- .3 Cable entry to be top only for line side and top entry or side entry for load side.
- .4 Access from front only. Maximum dimensions to be selected to allow transport into electrical rooms.
- .5 For Cabot Tower, maximum dimensions, confirmed by Contractor, are 640mm wide, 450mm deep, and 1700mm high.
- .6 For Quonset Hut, maximum dimensions are 640mm wide, 700mm deep and 2000mm high.
- .7 100mm steel channel sills for base mounting.
- .8 Full height outer doors, gasketed, hinges on left side, provision for multiple padlocking. Three point latch, stops, to open at least 135 degrees.
- .9 Distribution fused sections with air or gas insulated switches.
- .10 Bus bars and main connections: insulated tin-plated or silver flashed 99.3% copper.
- .12 Identify bus bars with phase color coding.
- .11 Contractor to provide proposed disconnect dimensions with bid.

2.3 BUSBARS

- .1 Three phase busbars, continuous current rating 600A extending full width of cubicle suitable supported on insulators.
 - .2 Main connections between busbars, major switching component(s) and fuses of continuous current rating to match major switching components.
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| <u>2.3 BUSBARS</u>
(Cont'd) | .3 | Insulated tin-plated or silver-flashed 99.3% pure copper for busbars and main connections. |
| <u>2.4 GROUNDING</u> | .1 | Copper ground bus extending full width of cubicles and located at bottom. |
| | .2 | Lugs at each end for size #4/0 grounding cable. |
| <u>2.5 FINISHES</u> | .1 | Apply finishes in accordance with Section 26 05 00 - Common Work Results for Electrical. |
| | .1 | Primary switchgear exterior: green. |
| <u>2.6 EQUIPMENT IDENTIFICATION</u> | .1 | Provide equipment identification in accordance with Section 26 05 00 - Common Work Results for Electrical. |
| | .2 | Nameplates: |
| | .1 | White plate, black letters, size 7. |
| | .2 | Complete board labelled: 4160 V. |
| | .3 | Branch fused disconnects labelled: as indicated. |
| <u>2.7 ACCEPTABLE MANUFACTURERS</u> | .1 | Siemens. |
| | .2 | Cutler Hammer. |
| | .3 | Schneider Canada. |
| | .4 | Custom switchgear vendors: |
| | .1 | JRS Industrial and Power Solutions: |
| | .1 | Contact: Alfredo David, D: (204)697-6706, P: (204) 775-8561 X 236, email: alfredo@jrs.ca |
| | .2 | RICPower: |
| | .1 | Contact: Maryam Aminsorkhi, C: (778) 388-9870, P: (604)549-8282 X 155, info@ricpower.com |
| | .3 | Strong Electric: |
| | .1 | Contact: Darrell Driedger, D: (204) 289-7020, P: (204) 774-5053, email: darrell@strongelectric.ca |
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PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Schedule modifications and all work requiring an outage outside with the owner and the utility.
- .2 Provide backup power and connection equipment as required to support all site building operations at the time the site electrical system is out of service during replacement of the switchgear.
- .3 Demolish existing substation interior wall as required to install switchgear.
- .4 Assemble all shipping sections of switchgear.
- .5 Locate switchgear on and secure to concrete housekeeping pad.
- .6 Connect main service to line terminals of main incoming section
- .7 Connect load terminals of distribution fused sections to feeders.
- .8 Check factory-made connections for mechanical security and electrical continuity.
- .9 Ground primary switchgear in accordance with Section 26 05 28 - Grounding - Secondary and as indicated on the drawings.
- .10 Select fuses to manufacturer recommended settings from Departmental Representative-provided Protection Coordination Study.
- .11 Remove and install doors, door frames, wall board, or other items as required to allow transport of equipment into indicated spaces.
- .12 Seal all conduit entering substation with cable seals suited for conduit and cable size. Core drill insert conduit in substation walls and seal with non-shrink grout.

3.2 SOURCE QUALITY CONTROL

- .1 Notify the Departmental Representative in writing a minimum of two (2) weeks in advance that primary switchgear and disconnects are ready for testing.
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3.2 SOURCE QUALITY CONTROL <u>(Cont'd)</u>	.2	Perform standard factory tests. Provide test results to Commissioning Agent and for inclusion in Operation and Maintenance Manual.
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<u>3.3 COMMISSIONING</u>	.1	Refer to Section 01 91 13 - Commissioning.
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