

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
**Bid Receiving Public Works and Government
Services Canada/Réception des soumissions
Travaux publics et Services gouvernementaux
Canada**
1713 Bedford Row
Halifax, N.S./Halifax, (N.É.)
B3J 1T3
Bid Fax: (902) 496-5016

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
Atlantic Region Acquisitions/Région de l'Atlantique
Acquisitions
1713 Bedford Row
Halifax, N.S./Halifax, (N.É.)
B3J 3C9
Nova Scot

Title - Sujet D200 Crane Replacement	
Solicitation No. - N° de l'invitation W355B-161504/A	Amendment No. - N° modif. 001
Client Reference No. - N° de référence du client W355B-16-1504	Date 2015-10-16
GETS Reference No. - N° de référence de SEAG PW-\$HAL-309-9634	
File No. - N° de dossier HAL-5-74070 (309)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2015-11-25	Time Zone Fuseau horaire Atlantic Standard Time AST
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: MacNeil, Blaine A.	Buyer Id - Id de l'acheteur hal309
Telephone No. - N° de téléphone (902) 496-5180 ()	FAX No. - N° de FAX (902) 496-5016
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

Solicitation No. - N° de l'invitation

W355B-161504/A

Amd. No. - N° de la modif.

001

Buyer ID - Id de l'acheteur

hal309

Client Ref. No. - N° de réf. du client

W355B-16-1504

File No. - N° du dossier

HAL-5-74070

CCC No./N° CCC - FMS No/ N° VME

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PART 1 - GENERAL INFORMATION

1. Security Requirement

Escorts will be provided for the equipment to be delivered and for installation and training as required.

2. Requirement

The Department of National Defence at CFB Halifax has a requirement for all labour, materials, equipment, and incidentals required to re-fit, install, field test, complete, and make ready for service:

10 ton (quantity 2) and 15 ton (quantity 1) capacity TRDG (top running double girder) cranes (trolley & hoist). Must be new. Cranes are to be installed in building D200, Fleet Maintenance Facility Cape Scott, Halifax, NS on existing bridge structures.

See Annex A for complete requirement.

3. Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

1. Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2015-07-03) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2. Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

3. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than five (5) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

4. Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Nova Scotia.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

PART 3 - BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid (2 hard copies)

Section II: Financial Bid (1 hard copy)

Section III: Certifications (1 hard copy)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement [process Policy on Green Procurement](http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Technical Bid

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment (line item detail p. 2). The total amount of Applicable Taxes must be shown separately.

Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

1.1 Technical Evaluation

The technical evaluation will assess whether all mandatory requirements are met using the information provided with a bid. Canada reserves the right, but is under no obligation to clarify any information or compliance with a mandatory requirement with a bidder.

- **Bidders must submit technical equipment documentation**
- **Bidders must complete the certification section at the bottom of the Statement of Requirement at Annex A.**
- **Bidders must complete the D200 Crane Checklist at Annex B.**
- **Bidders must complete the Basis of Payment at Annex C.**

1.2 Financial Evaluation

The price of the bid will be evaluated in Canadian dollars, Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included.

2. Basis of Selection

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and associated information to be awarded a contract.

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default in carrying out any of its obligations under the Contract, if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority may render the bid non-responsive or constitute a default under the Contract.

5.1. Certification Required With the Bid

Bidders must submit the following duly completed certifications as part of their bid.

5.1.1 Declaration of Convicted Offences

As applicable, pursuant to subsection Declaration of Convicted Offences of section 01 of the Standard Instructions, the Bidder must provide with its bid, a completed [Declaration Form](#)

(<http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html>), to be given further consideration in the procurement process.

5.2. Certifications Precedent to Contract Award

The certifications listed below should be completed and submitted with the bid, but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to comply with the request of the Contracting Authority and to provide the certifications within the time frame provided will render the bid non-responsive.

5.2.1 Integrity Provisions – List of Names

Bidders who are incorporated, including those bidding as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Bidder.

Bidders bidding as sole proprietorship, as well as those bidding as a joint venture, must provide the name of the owner(s).

Bidders bidding as societies, firms or partnerships do not need to provide lists of names.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "[FCP Limited Eligibility to Bid](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from [Employment and Social Development Canada \(ESDC\) - Labour's](#) website.

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](#)" list at the time of contract award.

PART 6 - RESULTING CONTRACT CLAUSES

1. Security Requirement

Escorts will be provided for the equipment to be delivered and for installation and training as required.

2. Requirement

The Contractor agrees to deliver the items and perform the work detailed in Annex A, Statement of Requirement.

3. Standard Clauses and Conditions

[All clauses and conditions identified in the Contract by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual)(<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

3.1 General Conditions

2010A (2015-09-03), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

4. Delivery

4.1 Delivery Date

Milestones:

1 - Delivery of all goods and equipment to FMF Cape Scott - 40% of the Contract Value – on or before March 31 2016

2 - Delivery of all shop drawings and engineered drawings of installation to FMF Cape Scott - 25% of the Contract Value – on or before March 31, 2016

3 – Completion of installation of all deliverables at FMF Cape Scott - 35% of the contract value - On or before March 31, 2016*

* Note - If completion of installation is delayed after March 31, 2016, the date of completion must Be approved by the Project Authority.

4.2 Delivery Terms

Delivery is to be completed at the location:

FMF Cape Scott HMC Dockyard
Maritime Forces Atlantic
Building D200
Halifax, NS
Canada

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Blaine MacNeil
Title: Supply Specialist
Public Works and Government Services Canada
Acquisitions Branch
Address: 1713 Bedford Row, Halifax, Nova Scotia, B3J 3C9

Telephone: 902-496-5180
Facsimile: 902-496-5016
E-mail address: blaine.macneil@pwgsc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

5.2 Project Authority (named upon award of contract)

The Project Authority for the Contract is:

Name:

Title:

Organization:

Address:

Telephone

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority, however the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

5.3 Contractor's Representative

Name:

Organization:

Telephone:

Facsimile:

E-mail Address:

6. Payment

6.1 Basis of Payment

SACC Manual Clause H3010C (2010-01-11) Milestone Payments

See Annex C Basis of Payment.

6.2 Limitation of Price

SACC Manual Clause C6000C (2011-05-16) Limitation of Price

7. Invoicing Instructions

The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

8. Certifications

8.1 Compliance

Compliance with the certifications and related documentation provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification, provide the related documentation or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

8.2 Federal Contractors Program for Employment Equity - Default by the Contractor

The Contractor understands and agrees that, when an Agreement to Implement Employment Equity (AIEE) exists between the Contractor and HRSDC-Labour, the AIEE must remain valid during the entire period of the Contract. If the AIEE becomes invalid, the name of the Contractor will be added to the "FCP Limited Eligibility to Bid" list. The imposition of such a sanction by HRSDC will constitute the Contractor in default as per the terms of the Contract.

9. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Nova Scotia.

10. Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the general conditions 2010A (2015-09-03);
- (c) Annex A, Statement of Requirement;
- (d) Annex B, D200 Crane Checklist;
- (e) Annex C, Basis of Payment;
- (f) the Contractor's bid dated _____ and any applicable amendments

Annex A

Statement of Requirement

Please note that the following are MANDATORY requirements. Alternatives that do not meet the below specifications must not be offered as part of a bid, unless otherwise clarified, and will not be accepted/could result in the termination of a contract.

I. Provide and Install the following:

Furnish all labor, materials, equipment and incidentals required to re-fit, install, field test, complete and make ready for service as required below.

1. All of the following **must be new** equipment only.
2. Requirement to supply and install **quantity two (2) - ten (10) ton & quantity one (1) - fifteen (15) ton** capacity TRDG (top running double girder) cranes (trolley & hoist). Cranes to be installed in building D200, Fleet Maintenance Facility Cape Scott, Halifax, NS **on existing bridge structures.**

2.1 Ten (10) ton crane specifications: (quantity 2)

1. 10 ton capacity (20000 lbs)
2. VFD motors and drives
3. RF remote control
4. one (1) hoist hook
5. hook swivel 360°
6. hoist type FEM M5 (2m)
7. trolley traversing duty group FEM M5 (2m)
8. trolley type: standard
9. ESR speed 24 ft/min
10. maximum weight of hoist and trolley 4000lbs
11. trolley traverse speed 0-65ft/min step less
12. hoist speed minimum 0-21 ft/min (16-21 ft/min top speed range) step less
13. voltage (main) 600vac/3ph/60hz
 - 13.1 A transformer may be used to lower the voltage to accommodate lower motor operating voltage (e.g. 440 or 480vac)
14. voltage (control) 110-120vac/1ph/60hz
15. hoisting height 7.750m
16. crane group CMMA C
17. trolley rail gauge 2.000metres
18. bridge travel group FEM M5 (2m)
19. bridge travel speed 0-100ft/min step less
20. total max amperage @ 600VAC: 40amps
21. maximum height to top of hoist 10metres

2.2 Fifteen (15) ton crane specifications: (quantity 1)

1. 15 ton capacity (30000 lbs)
 2. VFD motors and drives
 3. RF remote control
 4. one (1) hoist hook
 5. hook swivel 360°
 6. hoist type FEM M5 (2m)
 7. trolley traversing duty group FEM M5 (2m)
 8. trolley type: standard
 9. ESR speed 15 ft/min
 10. maximum weight of hoist and trolley 4000 lbs
 11. trolley traverse speed 0-65ft/min step less
 12. hoist speed minimum 0-16 ft/min (12-16 ft/min top speed range) step less
 13. voltage (main) 600vac/3ph/60hz
 - 13.1 a transformer may be used to lower the voltage to accommodate lower operating motor voltage (e.g. 440-480vac)
 14. voltage (control) 110-120vac/1ph/60hz
 15. hoisting height 7.750m
 16. crane group CMMA C
 17. trolley rail gauge 2.000metres
 18. bridge travel group FEM M5 (2m)
 19. bridge travel speed 0-100ft/min step less
 20. total max amperage @ 600VAC: 40amps
 21. maximum height to top of hoist 10metres
3. Requirement to supply and install approximately 1200 feet of ground bus bar and accessories in two bays (centre & north) of building D200, FMFCS as described below in **section IA+IB**. This installation must tie in and be compatible with existing bus equipment and new crane equipment.
4. Requirement to supply and install VFD controls, bridge drives, VFD rated motors, and brakes for three (3) TRDG cranes.
5. Requirement to supply and install **wireless radio (RF) remote and local** (hard wired) **control** in three (3) TRDG cranes. Infrared (IR) control will not be accepted.

5.1 Wireless radio remote control specifications:

1. Belly box style
2. lightweight
3. ergonomic design
4. minimum of two (2) joystick controllers
5. digital and analog outputs
6. manual frequency switch
7. push buttons, toggle and rotary switch options
8. rugged nylon or equivalent construction

9. minimum NEMA 4 (IP65) rating
10. dual access code system, signal only operates equipment intended
11. NiMH rechargeable battery pack with minimum 8 hrs operating time
12. mushroom E-stop
13. shoulder/neck/waist strap
14. LED/LCD display for load, speed, and system feedback data/info
15. greater than six (6) unique programmable frequencies
16. isolation plug or key
17. minimum 250ft operating range in industrial area
18. minimum 400ft operating range in obstructed area
19. 2.4Ghz operation frequency preferred but not mandatory
20. Additional functionality:
 - False Command Prevention: Wireless control receivers must be designed to accept only valid commands and those valid commands must come from only one authorized transmitter.
 - Inadvertent Command Prevention: The transmitter should not transmit a command unless the operator makes a purposeful action to issue a command.
 - Emergency Stop Override: In the event of an emergency, there must be a simple and readily accessible command that will take precedence over all other communications, stop the controlled equipment, and place the equipment in a safe mode.
 - Interrupted Transmission Failsafe: In the event that the receiver loses the command signal from the transmitter, the receiver must take action to place the controlled equipment in a safe mode.
 - Receiver Failsafe: In the event the receiver's electronics fail or lose power, the relays that control the equipment must fail to a safe mode of operation.

Example of belly box design



5.2 Local (hard wired) control specifications:

1. controls to mimic functionality of the belly box
 2. minimum two (2) joysticks
 3. digital and analog outputs
 4. push buttons, toggle switches, or rotary switch options
 5. minimum NEMA 4 (IP65) enclosure
 6. LED/LCD display for load, speed, and system feedback data/info
 7. mushroom E-stop
 8. permanently mounted in operators cabin
-
6. Requirement to supply and install bridge, trolley and hoist panel & controls in three (3) TRDG cranes.
 7. Requirement to supply and install festoon system c/w track & supports on three (3) TRDG cranes.
 8. Requirement to supply and install crane equipment that has been fully aligned, assembled, outfitted and **factory tested prior to arrival** on site of owner.
 9. Requirement to supply and setup one (1) additional belly box radio remote control (usable on any of the three cranes installed).
 10. Requirement to supply and install **all required** conduit, wire and fasteners to complete the crane systems.
 11. Requirement to inspect existing bridge structure, equipment and rails and make recommendations on any defects or non-compliance items found.
 12. A site visit is recommended prior to bidding due to the complexity of the building and its infrastructure. Existing crane documents/info can be requested at that time.
 13. All equipment, motors, VFD controllers and panels shall be CSA approved or have an equivalent certification as outlined in this specification, section VIII Electrical Certification.

IA. Provide and Install the following:

Furnish all labor, materials, equipment and incidentals required to install, field test, complete and make ready for service as required.

1. Requirement to supply and install approximately 1200 feet of ground bus bar as per manufacturer's specifications (documents provided with parts). To be added to existing bus bar system. New bus bars are required to match the existing bus bars and meet or exceed any existing crane system standard. Identify all associated code deficiencies involving bus bar system and recommend appropriate changes as part of this contract.

2. Requirement to supply and install 240 bus bar hanger extenders to extend existing bus bar hangers which will support new ground bus bar as per manufacturer's specifications.
3. Requirement to supply and install sixteen (16) sets of double collector shoes (one set per phase and ground on four (4) overhead cranes) as per manufacturer's specifications. Collector shoes are to meet or exceed rating of existing single collector shoes.
4. Requirement to supply and install grounding conductors and associated equipment to tie ground bus bar system to existing grounding grid in the building and to existing crane structure (bridge, trolley and hoist) via collector shoes as per current CEC.
5. Requirement to supply and install 150 feet of #6 AWG green ground cable from ground bus collector shoe assembly to crane control cabinet & main disconnect in operator's cabin in each of four (4) cranes. 600 feet total #6 AWG.
6. Requirement to supply and install 1/2" rigid conduit pipe, secured to the crane girder, to physically protect the insulated #6 AWG green ground cable from collector shoe assembly to the control panels and main switch located in the crane operator's cabin.
7. Requirement to supply and install all required conduit, wire and fasteners to complete system. Ground continuity is to be established throughout the entire system, less than three (3 Ω) ohms measurable resistance upon completion.
8. A site visit is recommended prior to bidding due to the complexity of the building and its infrastructure. Crane documents/info can be requested at this time.

IB. Material (not a complete list)

1. Duct-O-Bar: FE-2008-2 G
2. Expansion assembly: FE-2008-2H10
3. Collectors (existing): C100V5
4. Tandem Collectors P-200-VT5
5. Hangers: FE-908-2SF
6. Power feeds: FE-2008-2CP

Refer to PDF file provided for more information and part numbers.

II. Tear Down / Demolition

Contractor is required to complete the following:

1. Meet with owner to discuss demolition method prior to work commencing.
2. Set up demo site, cordon off area below crane and make safe for workers / pedestrians below.
3. Disconnect collector shoes from crane and remove wiring.

4. Disconnect existing hoist and trolley and remove from crane. Hoist and trolley to be held for storage by owner (FMFCS).
5. Disconnect existing bridge drives and remove from crane (bridge structure to remain in place). Bridge drives to be held for storage by owner (FMFCS).
6. Disconnect existing / obsolete electrical control & power panels and remove from crane. Control & power panels to be held for storage by owner (FMFCS).
7. Disconnect existing festoon system and dispose of it.
8. Disconnect & remove all existing obsolete bridge wiring and dispose of it.
9. The use of diesel and propane machinery shall be subject to the building safety regulations provided for D200, CFB Halifax, FMFCS.
10. Floor loading restrictions are in place in this building. Equipment used for the demolition must first be approved by FMFCS for its use in the building.

III. Installation Considerations

1. Trolley stops shall be of sufficient size and strength for each crane's specified capacity and be **welded** on bridge structure. A design example can be provided for size, shape and material.
2. All bridge modifications that are made to accommodate the new trolley and hoists shall be identified before the contract commences and made part of this contract and quote.
3. Control & power panels for trolley, hoist and bridge shall be **permanently mounted** iaw CEC specifications on bridge walkway.
4. Bridge drives shall be **mounted and fit** on bridge walkway.
5. There shall be a new festoon system for the trolley for each of the three (3) cranes. They will be complete with cable supports across bridge end truck and to the control panel.
6. All wiring shall be terminated in control and power panels according to industry standard and inspected /tested to latest CSA or equivalent standard as outlined in this specification, section VIII and iaw latest version of CEC specifications.
7. All cranes shall be fitted with a lockable **isolation switch** in the operator's cabin so as to eliminate the possibility of crane control from local (cabin) controls and radio controls at the same time.
8. Collectors shall be of the double shoe type; that are compatible with the existing Duct-O-Bar: FE-2008-2.
9. All hoist, trolley and bridge controllers, motors, VFDs and panels shall be CSA or equivalent certified as outlined in this specification, section VIII.

10. All control cabinets shall be equipped with temperature control systems to ensure crane controls do not overheat due to building ambient temperature.

11. Existing TRDG Crane specifications:

- Capacity: 10 ton & 15 ton
- Span: 28.650m/94ft
- Lifting Height: 7.750m
- Top of Rail: 8.73m
- Top of Hoist: 9.73m
- Power Supply: 575vac/3ph/60hz
- Control Voltage: 120vac/1 ph/60hz
- Lifting Speeds: 1.3, 3.0, 4.5, 6.0, 7.5, 9.2 (m/min)
- Trolley Speeds: 9.0, 25.0, 45.0 (m/min)
- Bridge Speeds: 9.0, 48.0, 90.0 (m/min)
- Existing Crane Design: C.S.A B167-1964 Class B Service

IV. General Notes:

1. The contractor shall provide all man lift equipment. Floor loading restrictions exist in the building where the demo/construction is to be done. All equipment shall be approved for use by the owner before demo/construction begins.
2. The contractor shall provide all lifting (cranes, etc.) equipment. Floor loading restrictions exist in the building where the demo/construction is to be done. All equipment shall be approved for use by the owner before demo/construction begins.
3. All lifting equipment (man lifts, cranes, etc.) shall be both certified by a licensed certification authority, in the province of Nova Scotia, for its intended use and have a current inspection sticker/document from that authority.
4. All work performed under this contract shall be done by certified trades people in the province of Nova Scotia. (e.g. electricians must be licensed in the province of Nova Scotia)
5. The contractor shall provide all equipment and material necessary to complete the contract. No equipment or material will be provided by the owner.
6. The contractor shall examine the site conditions affecting the work. **No compensation for extras will be allowed for failing to do so.**
7. The contractor shall give all notices, obtain all permits and approvals from the Nova Scotia Department of Labour as necessary and pay all necessary fees in order to carry out the specified work in this contract.
8. Contractor shall verify material, material quantities, part numbers and fittings required prior to submitting bid. **No compensation for extras will be allowed for failing to do so.**

9. Contractor is responsible for all cutting and patching required for the installation of mechanical work unless noted otherwise and shall refinish affected surfaces, as part of the contract, to match adjacent finish.
10. All equipment, debris and materials shall be picked up and kept out of the way of operations and disposed of offsite, at the contractor's expense, unless otherwise specified in this specification or by owner.
11. The contractor shall be responsible for disposing of all waste materials and debris, offsite, generated by the contractor. Contractor is to dispose of equipment and fittings removed (if necessary) from existing system unless otherwise specified in this specification or by owner.
12. A small laydown area for a trailer or sea can container may be provided for the storage of contractor tools and equipment on site. Security of this trailer or container is not guaranteed by FMFCS and is the responsibility of the contractor. Contractor shall give two (2) week notice to FMFCS Project Manager if this laydown area is required.
13. Guarantee: the contractor shall without additional charge replace any work, material or equipment which develops a defect within one (1) year of contract completion and acceptance by owner.
14. The work in this contract is to be performed in accordance with these notes, CEC and CSA B167-08 (or latest editions) and shall include furnishing all the labour, material, and equipment required to complete and leave ready for operation the overhead crane system.
15. Notice of hot work in the work area or FMFCS production interference will be given two days before it commences to the FMFCS Project Manager on site in writing (email or text message).

V. Special Instructions and/or Information:

1. A work schedule is to be developed by the contractor in conjunction with the owner to minimize negative impact on production in the affected area. This shall require the contractor to work between the hours of 1600 and 0700, Monday to Friday unless otherwise agreed upon by the contractor and the owner.
2. Only one crane shall be permitted to be installed at one time to minimize interference with production in the shops of building D200. Order of installation will be as follows (unless otherwise agreed upon by contractor and owner: 1. North Bay (Chemical Cleaning) 2. South Bay (Plate Shop) 3. Centre Bay (Above Water Weapons)
3. The ground bar installation shall be done on its own, separate from the installation of the cranes to minimize the negative impact on the production areas in D200. Order of installation will be as follows (unless otherwise agreed upon by contractor and owner: 1. North Bay 2. Centre Bay.
4. A hazard assessment and contractor health and safety plan must be submitted to the FMFCS Project Manager prior to work beginning.

5. Bus bar to be tested over the entire length of the installation, electrically and mechanically for congruity and continuity from supply through to motors, control system and power system (CSA B167-08 and CEC latest editions).
6. All electrical parts supplied must meet CSA or equivalent as outlined in this specification, section VIII.
7. All work must be performed to standard as per CSA B167-08 (or latest edition) for Overhead Travelling Cranes and the current Canadian Electrical Code.
8. There are two cranes in each bay of D200 which are powered from the same 600VAC/3Ø supply via Duct-O-Bar. Only one crane in each bay will be replaced with the new VFD controlled cranes under this contract. It shall be necessary to leave the other crane, not being replaced, serviceable during the hours of 0700-1600 whenever possible during the construction/demolition periods of this contract. The Project Manager for FMFCS shall be notified (in writing) to the contrary at least 24 hours before such downtime.
9. Drawings, specifications and documentation to be provided to owner before work begins (for approval) and "as built" drawings, specifications and documentation to be provided to owner upon contract conclusion. All drawings, specs and designs submitted for approval / as built must have an engineer's stamp attached from the Province of Nova Scotia.
10. Shop drawings of **all** equipment to be used on this contract shall be provided to FMFCS for approval prior to contract commencing.

VI. Commissioning

1. Commissioning of new cranes and ground bus bar will be done at a convenient time for the owner as to minimize interruption to production in the shops of D200.
2. All work will be measured against the accepted standard of CSA B167-08, ASME, ANSI and the CEC (latest editions).
3. Commissioning will include but will not be limited to the following:
 - Weight test: 125% rated crane load or other standard set out by CSA B167-08, ASME, and ANSI (latest edition)
 - Limit function test(s) on hoist, trolley and bridge
 - Speed test(s), presets on hoist, trolley and bridge as per this specification and manufacturer's specification
 - Acceleration and deceleration tests on hoist, trolley and bridge
 - Full function test(s) on hoist, trolley and bridge full load and no load
 - Mechanical checklist
 - Electrical checklist
 - Local control function
 - RF control function

- Grounding system continuity and congruity
 - Safeties (E-stops, anti-collision, limits)
 - CSA certification
 - ASME/ANSI standards for overhead cranes
 - Planned maintenance routine for mechanical and electrical
4. A commissioning report shall be completed with the results of the above tests/checks and delivered to the owner upon completion of the contract.
 5. Three (3) operation and maintenance manuals shall be provided for each crane and its associated equipment in hard and soft copy.
 6. A list of **manufacturer's** part numbers is required for all equipment supplied and installed in this contract.
 7. Drawings, specifications and documentation to be provided to owner before work begins (for approval) and "as built" drawings, specifications and documentation to be provided to owner upon contract conclusion. All drawings, specs and designs submitted for approval / as built must have an engineer's stamp attached from the Province of Nova Scotia.
 8. CSA certification (or equivalent in section VIII) of equipment and control cabinets shall be done prior to delivery to buyer's location and at the expense of the supplier if not provided by the manufacturer.
 9. Delivery of all equipment to buyer's location must be included in the quote.
 10. Contractor shall submit a work schedule including start, completion and delivery to FMFCS, Project Manager.
 11. A crane operator can be provided by FMFCS for the purpose of commissioning the cranes if necessary.

VII. Training

A three (3) day training session (21 hours on site) shall be provided with the purchase of this machinery. This training session will cover the full use, operation and maintenance of the new cranes, radio (RF) remote belly boxes, cabin controls and isolation switches. The lesson should include practical and interactive examples. There will be 30-40 trainees total in the training session. The trainer shall be knowledgeable in all aspects (operation & maintenance) of the crane equipment being installed. Persons trained shall be documented and a list shall be presented to the owner upon completion. Training schedule shall be agreed upon between supplier and the owner.

VIII. Electrical Certification – Bidder to complete

- 1.1) **Equipment shall be certified by an acceptable Electrical Certification Organization. The following Certification Organizations are acceptable. The electrical power and control panels as well as power and control components must bear a label from one of these organizations in order to be recognized as approved.**

IMPORTANT: Labels from all Organizations below (with the exception of CSA and ULC), **must be accompanied by a small "c" at the eight o'clock position** or Canadian Standard number to indicate the product has been certified to the Canadian Standard.

Identify with a check mark "v" or "X" which organization shall be used:

	Compliant "v" or "X"
a.) Canadian Standards Association (CSA),	_____
b.) QPS Evaluation Services	_____
c.) Intertek Testing Services,	_____
d.) Underwriters Laboratories of Canada (ULC),	_____
e.) Underwriters Laboratories Inc. (UL),	_____
f.) Met Laboratories Inc. (MET),	_____
g.) TUV Rheinland of North America,	_____
h.) Quality Auditing Institute (QAI),	_____
i.) TUV America Inc.	_____
J.) Nemko Canada Inc.	_____
k.) Curtis-Straus LLC	_____
l.) Labtest Certification	_____
m.) NSF International	_____
n.) Omni-Test Laboratories	_____
o.) FM Approvals	_____
p.) Entella Canada	_____

- 1.2) Electrical equipment that is not certified by one of the above agencies can only be accepted if the equipment is "field" inspected under the Special Inspection Programs and labelled (complete with verification documentation). This inspection must take place before equipment delivery. Identify with a check mark "v" or "X" which organization shall be used:

	Compliant Yes/No
a.) Canadian Standards Association (CSA)	_____
b.) QPS Evaluation Services	_____
c.) Electrical Safety Authority (ESA)	_____
d.) Quality Auditing Services (QAI)	_____
e.) Intertek Testing Services	_____
f.) MET Laboratories Inc. (MET)	_____
g.) TUV America Inc.	_____
h.) Underwriters Laboratories of Canada (ULC)	_____

Glossary of terms and acronyms:

TRDG – Top Running Double Girder

CFB – Canadian Forces Base

FEM M5 2m – European Federation of Materials Handling, class, usage

ESR – Extended Speed Range

CMMA C – Crane Manufacturers Association of America, moderate use

Class ‘C’ moderate use: This service covers cranes whose service requirements are deemed moderate, handling loads which average 50 percent of the rated capacity with 5 to 10 lifts per hour, averaging 15 feet, with not over 50 percent of the lifts at rated capacity. Typical examples are cranes used in machine shops, paper mill machine rooms, etc.

VFD – Variable Frequency Drive

RF – Radio Frequency

IF – Infrared Frequency

NEMA – National Electrical Manufacturers Association

NiMH – Nickel-metal Hydride

LED – Light Emitting Diode

LCD – Liquid Crystal Display

FMFCS – Fleet Maintenance Facility Cape Scott

Belly Box – Hand held radio remote control for overhead crane with anti-fatigue strap support and multiple joystick, knob, lever or button controls

CEC – Canadian Electrical Code

CSA – Canadian Standards Association

AWG – American Wire Gauge

IAW – In Accordance With

Owner – FMFCS

ASME – American Society of Mechanical Engineers

ANSI – American National Standards Institute

IP65 – International Protection Marking or Ingress Protection Marking

Annex B

D200 Crane Checklist

Bidders MUST complete the following chart and indicate whether they can supply the equipment AS SPECIFIED.

For numbers 1 – 15: make, model, and quantity are to be completed

For numbers 16 – 30: bidders are to check yes or no, whether the items are included as part of a bid, and enter any applicable comments or expiry dates

	<u>Contract Requirement</u>	<u>Required</u>	<u>Make</u>	<u>Model</u>	<u>Quantity Supplied?</u>
1.	Variable Speed Drive	12			
2.	Ten Ton Crane Hoist	2			
3.	Ten Ton Crane Trolley	2			
4.	Fifteen Ton Crane Hoist	1			
5.	Fifteen Ton Crane Trolley	1			
6.	Programmable Logic Controller (would be acceptable)	No			
7.	Radio Remote Terminals (RF) (Belly Boxes) Infrared not acceptable	4			
8.	Belly Box Cabin Controls (hard wired- not RF)	3			
9.	Radio Frequency	400Mhz – 2.4Ghz			
10.	Remote Operating Range	Minimum 250- 400ft			
11.	Brake Bridge (2 per crane)	6			

12.	Bus Bar Hangers	240			
13.	Bridge Motors (2 per crane)	6			
14.	Ground Bus	1200ft			
15.	Double Collector Shoes	16			
	<u>Contract Requirement</u>	<u>Required</u>	<u>Yes</u>	<u>No</u>	<u>Comment</u>
16.	Control Voltage	120VAC/1ph or 24VAC/1ph or 24VDC			
17.	Motor Voltage	600VAC/3ph			
18.	Lockable Isolation Switch	3			
19.	Panel Temperature Control	Each panel			
20.	Power and Control Panels CSA Inspected (or equivalent)	Each Panel			
21.	Hoist Height	7.5m			
22.	10 Ton Hoist Top Speed	Minimum 16-21 ft/min			
23.	15 Ton Hoist Top Speed	Minimum 12-16 ft/min			
24.	Motor Voltage	600VAC/3ph			
25.	Total Amperage	40 amps or less			
26.	#6 Ground Wire	600ft			
27.	Welding Certificate (CWB)	Expiry Date _/_/_/			

28.	Certified NS Electrician(s)	Expiry Date __/__/__			
29.	Anti-collision method	Photo Eye & Crane Control Integration			
30.	Training	3 days/30 trainees			
	Please re-read the entire document. Ensure that you have completed all of the mandatory documentation prior to submitting your bid. It is strongly recommended that you review Part 4, section 1.1 Mandatory Technical Criteria				

Contractor _____

Signature of Contractor _____

Date _____

Annex C

Basis of Payment/Financial Evaluation

1. In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price as identified below. Customs duties are included and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

The items noted below are to be priced inclusive of all related items and work identified in Annex A, Statement of Requirement and Annex B, D200 Crane Checklist.

	<u>Item</u>	-	<u>Quantity</u> <u>(A)</u>	-	<u>Price (B)</u>	-	<u>Extended Price</u> <u>(A*B)</u>
1	Ten ton crane		2		\$ _____		\$ _____ (D)
2	Fifteen ton crane		1		\$ _____		\$ _____ (E)
					Evaluation Total (D+E): \$ _____		

2. Please provide a detailed breakdown of costs, use additional columns if necessary:

Item	Description or Deliverable	Quantity	Cost
1	Ten Ton Crane	2	
2	Ten Ton Crane Installation	2	
3	Fifteen Ton Crane	1	
4	Fifteen Ton Crane Installation	1	
5	Bridge Motors & Brakes	3	
6	Bridge Motor & Brake Installation	3	
7	Bus bar and Accessories	1200ft	
8	Bus Bar and Accessories Instsallation	1200ft	
9	Remote Systems (3) / Belly Boxes (4) (Remotes)	3/4	
10	Remote Systems & Belly Boxes Installation	3	
11	Operator Cabin Controls	3	
12	Operator Cabin Controls Installation	3	
13	Training	3 days	
14	Freight		
15	Total (before tax) <i>this total must match the evaluation total in the above chart.</i>		