Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

Bid Receiving - PWGSC / Réception des soumissions - TPSGC
11 Laurier St. / 11, rue Laurier
Place du Portage , Phase III
Core 0B2 / Noyau 0B2
Gatineau, Québec K1A 0S5
Bid Fax: (819) 997-9776

INVITATION TO TENDER
APPEL D'OFFRES

Tender To: Public Works and Government Services Canada

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

Soumission aux: Travaux Publics et Services Gouvernementaux Canada

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici et sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet New Control System	
Solicitation No. - N° de l'invitation F2599-175104/A	**Date** 2017-08-23
Client Reference No. - N° de référence du client F2599-175104	**GETS Ref. No. - N° de réf. de SEAG** PW-$$MD-032-26415
File No. - N° de dossier 032md.F2599-175104	**CCC No./N° CCC - FMS No./N° VME**
Solicitation Closes - L'invitation prend fin **at - à 02:00 PM** **on - le 2017-09-13**	**Time Zone** **Fuseau horaire** Eastern Daylight Saving Time EDT
F.O.B. - F.A.B. **Plant-Usine:** ☐ **Destination:** ☐ **Other-Autre:** ☐	
Address Enquiries to: - Adresser toutes questions à: Moore(md div), Chris	**Buyer Id - Id de l'acheteur** 032md
Telephone No. - N° de téléphone (819) 420-2893 ( )	**FAX No. - N° de FAX** (613) 697-0375
Destination - of Goods, Services, and Construction: **Destination - des biens, services et construction:** Specified Herein Précisé dans les présentes	

Instructions: See Herein

Instructions: Voir aux présentes

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

Delivery Required - Livraison exigée See Herein	**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**

Issuing Office - Bureau de distribution

Ship Refits and Conversions / Radoubss et modifications de navires and / et
11 Laurier St. / 11, rue Laurier
6C2, Place du Portage
Gatineau, Québec K1A 0S5

Canada

TABLE OF CONTENTS

PART 6 - FINANCIAL AND OTHER REQUIREMENTS

6.1 Financial Capability
6.2 Workers' Compensation - Letter of Good Standing
6.3 Valid Labour Agreement
6.4 Preliminary Work Schedule
6.5 ISO 9001:2008 - Quality Management Systems
6.6 Health and Safety
6.7 Fire Protection, Fire Fighting and Training Procedures
6.8 Hazardous Waste
6.9 Insurance Requirements
6.10 Project Management Services
6.11 List of Proposed Sub-Contractors
6.12 Quality Plan
6.13 Inspection and Test Plan
6.14 Environmental Protection

PART 7 - RESULTING CONTRACT CLAUSES

7.1 Requirement
7.2 Standard Clauses and Conditions
  7.2.1 General Conditions
  7.2.2 Supplemental General Conditions
7.3 Term of Contract
  7.3.1 Work Period - Marine
7.4 Authorities
  7.4.1 Contracting Authority
  7.4.2 Technical Authority
  7.4.3 Inspection Authority
7.5 Payment
  7.5.1 Basis of Payment - Firm Price
  7.5.2 Terms of Payment - Progress Payment
  7.5.3 Liens - Section 427 of the Bank Act
  7.5.4 Limitation of Price
  7.5.5 Time Verification
7.6 Invoicing Instructions
  7.6.1 Invoices
  7.6.2 Invoicing Instructions - Progress Claim
  7.6.3 Warranty Holdback
7.7 Certifications
  7.7.1 Compliance
7.8 Federal Contractors Program for Employment Equity - Default by the Contractor
7.9 Applicable Laws

List of Annexes:

PART 1 - GENERAL INFORMATION

1.1 Introduction

The bid solicitation is divided into seven parts plus attachments and annexes, as follows:

Part 1 General Information: provides a general description of the requirement;

Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation and states that the Bidder agrees to be bound by the clauses and conditions contained in all parts of the bid solicitation;

Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;

Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, if applicable, and the basis of selection;

Part 5 Certifications: includes the certifications to be provided;

Part 6 Financial and Other Requirements: includes specific requirements that must be addressed by bidders; and

Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Technical Specification, the Basis of Payment, the Federal Contractors Program for Employment Equity - Certification, the Insurance Requirements and other Annexes.

1.2 Summary

1. The Requirement is:

a) The Canadian Coast Guard has a requirement to upgrade the HVAC software and controls for the existing Carrier Comfortview Network. in accordance with the associated Technical Specifications detailed in the Statement of Work at Annex “A”.

b) To carry out unscheduled work authorized by the Contracting Authority.

2. Bidders must provide a list of names, or other related information as needed, pursuant to section 01 of Standard Instructions 2003.

3. The requirement is exempt from the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), Annex 4 and the North American Free Trade Agreement (NAFTA), Chapter Ten Annex 1001.2b Paragraph 1(a). However, it is subject to the Agreement on Internal Trade (AIT). The sourcing strategy relating to this procurement will be limited to suppliers in Eastern Canada, in accordance with Shipbuilding, Refit, Repair and Modernization Policy (1996-12-19).

4. There is a Federal Contractors Program (FCP) for employment equity requirement associated with this procurement; see Part 5 - Certifications, Part 7 - Resulting Contract Clauses and the annex named Federal Contractors Program for Employment Equity - Certification.

1.3 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

2.1 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 **(https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual)** 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 (2014-03-01) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.2 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.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than **three** (**3) working 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.

Any clarifications or changes to the bid solicitation resulting from the questions and answers will be included as an amendment to the bid solicitation.

2.4 Applicable Laws

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

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.

Refer to Annex "I1" for Deliverables/Certifications.

2.5 Optional Site Visit – Vessel

It is recommended that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for the site visit to be held on September 6, 2017 at 10:00am at the Canadian Coast Guard Base, 401 King St W, Prescott, ON K0E 1T0. All Contractors must have valid identification to sign in at the Main Gate.

There is a designated parking area available at the CCG Base Prescott.
Map : http://www.tbs-sct.gc.ca/dfrp-rbif/pn-nb/22500-eng.aspx

Bidders are requested to communicate with the Contracting Authority no later than three (3) business days prior to the site visit date to confirm attendance and provide the name(s) of the person(s) who will attend. Bidders may be requested to sign an attendance sheet. Bidders who do not attend or do not send a representative will not be given an alternative appointment but they will not be precluded from submitting a bid. Any clarifications or changes to the bid solicitation resulting from the site visit will be included as an amendment to the bid solicitation.

2.6 Bidders' Conference

A bidder's conference chaired by the Contracting Authority will be held at Canadian Coast Guard Base, 401 King St W, Prescott, ON K0E 1T0 on September 6, 2017 at 1pm. The scope of the requirement outlined in the solicitation will be reviewed during the conference and questions will be answered. It is recommended that bidders who intend to submit a bid attend or send representation.

Bidders are requested to communicate with the CA before the conference to confirm attendance. Bidders should provide, in writing to the CA, the names of the person(s) who will be attending and a list of issues they wish to table no later than three (3) business days before the scheduled Conference.

Any clarifications or changes to the solicitation resulting from the Bidder's Conference will be included as an amendment to the solicitation. Bidders who do not attend will not be precluded from submitting a bid.

2.7 Work Period - Marine

Work must commence and be completed as follows:

Commence: October 4, 2017
Complete: October 31, 2017

By submitting a bid, the Bidder certifies that they have sufficient materiel and human resources allocated or available and that the above work period is adequate to both complete the known work and absorb a reasonable amount of unscheduled work.

PART 3 - BID - PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

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

Section I - Technical Bid (1 hard copy)
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). To assist Canada in reaching its objectives, bidders are encouraged to :

1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and/or 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

The Bidder must provide all of the deliverables as referenced in Annex "I1" Deliverables and Certifications.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Financial Bid Presentation Sheet in Annex “H”, and the detailed Pricing Data Sheet, Appendix 1 to Annex “H”. The total amount of Applicable Taxes must be shown separately.

Section III: Certifications

Bidders must submit the certifications required under Part 5.

3.1.1 Unscheduled Work and Evaluation Price

In any vessel refit, repair or docking contract, unscheduled work will arise after the vessel and its equipment is opened up and surveyed.

An anticipated cost for the unscheduled work will be included in the evaluation price. The evaluation price will be calculated by including an estimated amount of additional person-hours multiplied by a firm hourly charge-out labour rate for unscheduled work and will be added to the firm price for the known work.

The Evaluation Price will be used for evaluating the bid. The additional amount of person-hours for unscheduled work will be based on historical experience and there is no minimum or maximum amount of unscheduled work nor is there a guarantee of such unscheduled work.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

(a)Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical, management and financial evaluation criteria.

(b) An evaluation team composed of representatives of Canada will evaluate the bids.

Section I - Technical Bid / Certifications

Notwithstanding deliverable requirements specified within the bid solicitation and its associated Technical Specification Annex “A”, mandatory deliverables that must be submitted with the Bidder's bid to be deemed responsive are summarized in Annex "I1".

Section II - Financial Bid

In order to be compliant, the Bidder's bid must, to the satisfaction of Canada, meet all requirements and provide all information required under Part 3, Section II - Financial Bid.

Canada reserves the right to request information to support any bid requirement. The Bidder is instructed to address each requirement in sufficient depth to permit a complete analysis and assessment by the Evaluation Team. The Bid will be deemed responsive if it is found to meet all the mandatory requirements.

Section III: Certifications

Bidders must submit the certifications required under Part 5.

4.1.1 Evaluation of Price

SACC Manual Clause A0220T (2007-05-25) Evaluation of Price

4.2 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.

Bidders should note that all contract awards are subject to Canada's internal approvals process, which includes a requirement to approve funding in the amount of any proposed Contract. Notwithstanding that a Bidder may have been recommended for award of Contract, issuance of any Contract will be contingent upon internal approval in accordance with Canada's policies. If such approval is not given, no Contract will be awarded.

4.3. Deliverables after Contract Award

Refer to Annex "I2".

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 Certifications Required Precedent to Contract Award

5.1.1 Integrity Provisions - Associated Information

By submitting a bid, the Bidder certifies that the Bidder and its Affiliates are in compliance with the provisions as stated in Section 01 Integrity Provisions - Bid of Standard Instructions 2003. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

5.1.2 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" 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.

Canada will also have the right to terminate the Contract for default if a Contractor, or any member of the Contractor if the Contractor is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list during the period of the Contract.

The Bidder must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification, before contract award. If the Bidder is a Joint Venture, the Bidder must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

PART 6 - FINANCIAL AND OTHER REQUIREMENTS

6.1 Financial Capability

SACC Manual Clause A9033T (2011-05-16) Financial Capability

6.2 Workers' Compensation - Letter of Good Standing

The Bidder must have an account in good standing with the applicable provincial or territorial Workers' Compensation Board.

The bidder must provide with the bid, a certificate or letter from the applicable Worker's Compensation Board confirming the Bidder's good standing account. Failure to comply with the request may result in the bid being declared non-responsive.

Refer to Annex "I1" for Deliverables/Certifications.

6.3 Valid Labour Agreement

If the Bidder has a labour agreement, or other suitable instrument, in place with all its unionized labour, it must be valid for the proposed period of any resulting contract. Documentary evidence of the agreement or suitable instrument must be provided on or before bid closing date. If this information is not provided with the bid it will render the bid non-responsive.

Refer to Annex "I1" for Deliverables/Certifications

6.4 Preliminary Work Schedule

At the time of bid closing the Bidder must submit to Canada one (1) copy of its preliminary production work schedule. This schedule is to show the commencement and completion dates for the Work in the available work period, including realistic target dates for significant events. This schedule will be reviewed with the successful Bidder at the Pre-Refit Meeting.

Refer to Annex "I1", Deliverables/Certifications.

6.5 ISO 9001:2008 - Quality Management Systems

The Bidder shall have in place a Quality Management System registered to ISO 9001:2008 or a Quality Management System modeled on ISO 9001-2008 and shall provide at time of bid closing:

- If registered its valid ISO 9001-2008 certification;
- Example of Quality Control Plan (QCP) as per clause 6.16.

Documentation and procedures of bidders may be subject to a Quality System Evaluation (QSE) by the Technical Authority during bid evaluation period.

Refer to Annex "I1" for Deliverables/Certifications.

6.6 Health and Safety

The Bidder must submit with its bid objective evidence that it has a documented Health and Safety system fully compliant with all current Federal, Provincial and Municipal regulations. If this information is not provided with the bid it will render the bid non-responsive.

Refer to Annex "I1" for Deliverable Requirements.

6.7 Fire Protection, Fire Fighting and Training Procedures

The Bidder must submit with its bid objective evidence that it has documented fire protection, firefighting and training procedures compliant with current regulations and their insurance requirements. The fire protection, firefighting and training procedures will, once accepted by Canada, form part of the Contract. Please refer to clause 7.26. If this information is not provided with the bid it will render the bid non-responsive.

Refer to Annex "I1" for Deliverable Requirements.

6.8 Hazardous Waste

1. The Bidder acknowledges that sufficient information has been provided by Canada with respect to the location and estimated amount of hazardous materials such as asbestos, lead PCBs, silica or other hazardous materials or toxic substances.

2. The price includes all costs associated with the removal, handling, storage, disposal and/or working in the vicinity of hazardous materials such as asbestos, lead, PCBs, silica and other hazardous materials or toxic substances on board the vessel, including those costs resulting from the need to comply with applicable laws and regulations in relation to the removal, handling, disposal or storage of hazardous materials or toxic substances.

3. The completion date for the Work takes into account the fact that the removal, handling, storage, disposal and/or working in the vicinity of hazardous materials such as asbestos, lead, PCBs, silica and other hazardous materials or toxic substances may be affected by the need to comply with applicable federal, provincial and municipal laws or regulations and that this will not be considered to be an excusable delay.

6.9 Insurance Requirements

The Contractor is responsible for deciding if insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any insurance acquired or maintained by the Contractor is at its own expense and for its own benefit and protection. It does not release the Contractor from or reduce its liability under the Contract.

Refer to Annex "I1", Deliverables/Certifications.

6.10 Project Management Services

The Bidder is required to provide a Project Management Team experienced and capable of successfully managing the asbestos removal contract as defined herein. Project management personnel, services and deliverables must comply with the requirements detailed in the contract.

1. Intent

(a) Job titles used in this annex are for clarity within this document only. The Contractor is free to choose job titles that suit its organization.

(b) The Contractor, through its Project Management Team, is responsible to discharge the duties and supply the deliverables required in the Contract and the Specifications.

(c) Project Management encompasses the direction and control of such functions as engineering, planning, purchasing, manufacturing, assembly, overhauls, installations and test and trials.

2. Project Manager

(a) The Contractor must supply an experienced Project Manager (PM).

(b) The PM must have experience in managing a project of this nature.

3. Project Management Team
Other than the Project Manager, the Contractor must assign and vary other job descriptions to suit its organization; provided however that the collective resume of its Project Management must provide for the effective control of the project elements including but not limited to:

i. Project Management
ii. Quality Assurance
iii. Planning and Scheduling

4. Tender Deliverable
Names, brief resumes, and list of duties for each of the team members that ensures that each of the project elements listed in Article 3. above have been addressed.

5. Reports
The following Management Reports and Documentation are to be prepared and maintained by the Contractor and submitted to Canada in accordance with the Contract or upon request by the Contracting Authority.

i. Production Work Schedule
ii Inspection Summary Report
iii. Growth Work Summary

Refer to Annex "I1" for Deliverables/Certifications.

6.11 List of Proposed Subcontractors

If the bid includes the use of subcontractors, the Bidder shall provide a list of all subcontractors including a description of the things to be purchased, a description of the work to be performed by specification section and the location of the performance of that work. The list should not include the purchase of off-the-shelf items, software and such standard articles and materials as are ordinarily produced by manufacturers in the normal course of business, or the provision of such incidental services as might ordinarily be subcontracted in performing the Work, i.e. subcontract work valued at less than $ 5,000.00 aggregate for the project.

Refer to Annex "I1" for Deliverables/Certifications.

6.12 Quality Control Plan

At the time of bid closing the Bidder must submit to Canada an example of its Quality Control Plan (QCP) as applied on previous projects of the same nature.

Refer to Annex "I1" for Deliverables/Certifications.

6.13 Inspection and Test Plan

At the time of bid closing the Bidder must submit to Canada an example of an Inspection and Test Plan (ITP) complete with requirement and inspection reports as developed on previous projects of the same nature.

Refer to Annex "I1" for Deliverables/Certifications.

6.14 Environmental Protection

At the time of bid closing the Bidder must submit details of its environmental emergency response plans, waste management procedures and/or formal environmental training undertaken by its employees.

Refer to Annex "I1" for Deliverables/Certifications.

PART 7 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

7.1 Requirement

The Contractor must:

a) The Canadian Coast Guard has a requirement to upgrade the HVAC software and controls for the existing Carrier Comfortview Network on the Canadian Coast Guard Vessel CCGS Griffon in accordance with the associated Technical Specifications detailed in the Statement of Work at Annex “A”.

b) carry out any unscheduled work authorized by the Contracting Authority.

7.2 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 issued by Public Works and Government Services Canada (PWGSC). The manual is available on the following PWGSC website: **(https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual)**

7.2.1 General Conditions

2030 (2014-03-01), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

2030 (2014-03-01) General Conditions Higher Complexity - Goods are hereby amended as follows:

Section 22 Warranty

1. The Contractor, if requested by Canada, must replace or repair at its own expense any finished work, excluding Government Issue incorporated in the Work, which becomes defective or which fails to conform to contract requirements as a result of faulty or inefficient manufacture, material or workmanship.

2. Despite acceptance of the finished work, and without restricting any other term of the Contract or any condition, warranty or provision imposed by law, the Contractor warrants that the following will be free from all defects and will conform with the requirements of the Contract:

   (a) All other painting work for a period of 365 days commencing from the date of acceptance of the Work;

   (b) All other items of work for a period of ninety (90) days commencing from the date of acceptance of the Work, except that:

   (i) the warranty on the work related to any system or equipment not immediately placed in continuous use or service will be for a period of ninety (90) days from the date of acceptance of the vessel;

(ii) for all outstanding defects, deviations, and work items listed on the Acceptance Document at Delivery, the warranty will be ninety (90) days from the subsequent date of acceptance for each item.

3. The Contractor agrees to pass to Canada, and exercise on behalf of Canada, all warranties on the materials supplied or held by the Contractor which exceed the periods indicated above.

4. Refer to Annex “E” and its Appendix “1” for Warranty Defect Claim Procedures and forms.

7.2.2 Supplemental General Conditions

1029 (2010-08-16) Ship Repairs
1031-2 (2012-07-16), Contract Cost Principles, apply and form part of the Contract.

7.3Term of Contract

7.3.1 Work Period - Marine

1. Work must commence and be completed as follows:

   Commence: October 4, 2017
   Complete: October 31, 2017

2. The Contractor agrees that the above time (the "Work Period") provides an adequate period to perform the subject work and absorb a reasonable amount of unscheduled work. The Contractor certifies that they have sufficient material and human resources allocated or available to complete the subject work and a reasonable amount of unscheduled work within the Work Period.

7.4Authorities

7.4.1 Contracting Authority

The Contracting Authority for the Contract is:

Chris Moore
Department of Public Works and Government Services Canada (PWGSC)
Defence and Major Projects Sector
PWGSC, 6C2 Place du Portage, Phase III
11 Laurier Street,
Gatineau, Quebec, K1A 0S5
Tel: (819) 420-2893
E-Mail - chris.moore@pwgsc-tpsgc.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.

7.4.2 Technical Authority

The Technical Authority for the Contract is:

Name will be determined at Contract Award

Name: _____
Telephone: _____
Cell: _____
E-mail: _____

The Technical 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 Technical Authority, however the Technical 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.

7.4.3 Inspection Authority

The Inspection Authority for the Contract is the Canadian Coast Guard.

Name will be determined at Contract Award

Name: _____
Telephone: _____
Cell: _____
E-mail: _____

The Inspection Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for the inspection of the Work and acceptance of the finished work. The Inspection Authority may be represented on-site by a designated inspector and any other Government of Canada Inspector who may from time to time be assigned in support of the designated inspector.

7.5 Payment

7.5.1 Basis of Payment - Firm Price

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price indicated in the Basis of Payment Annex “B" for the Known Work. Applicable Taxes are extra, if applicable. Payment for unscheduled work shall be in accordance with Annex "B".

No increase in the total liability of Canada or in the price of the Work resulting from any design changes, modifications or interpretations of the Specifications, will be authorized or paid to the Contractor unless such design changes, modifications or interpretations have been authorized in writing, by the Contracting Authority prior to their incorporation in the Work.

7.5.2 Terms of Payment - Progress Payment

1. Canada will make progress payments in accordance with the payment provisions of the Contract, no more than once a month, for cost incurred in the performance of the Work, up to 90 percent of the amount claimed and approved by Canada if:

(a) an accurate and complete claim for payment using form PWGSC-TPSGC 1111 http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/1111.pdf, Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;

(b) the amount claimed is in accordance with the basis of payment;

(c) the total amount for all progress payments paid by Canada does not exceed 90 percent of the total amount to be paid under the Contract;

(d) all certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives.

2. The balance of the amount payable will be paid in accordance with the payment provisions of the Contract upon completion and delivery of all work required under the Contract if the Work has been accepted by Canada and a final claim for the payment is submitted.

3. Progress payments are interim payments only. Canada may conduct a government audit and interim time and cost verifications and reserves the rights to make adjustments to the Contract from time to time during the performance of the Work. Any overpayment resulting from progress payments or otherwise must be refunded promptly to Canada.

7.5.3 Liens - Section 427 of the Bank Act
SACC Manual Clause H4500C (2010-01-11) Liens - Section 427 of the Bank Act

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

7.5.5 Time Verification
SACC Manual Clause C0711C (2008-05-12) Time Verification

7.6 Invoicing Instructions

The Contractor must submit invoices in accordance with the information required in Section 13 of 2030, General Conditions, Higher Complexity, Goods and Article 7.5 Payment and Article 7.6 Invoicing Instructions.

7.6.1 Invoices

1. Invoices are to be made out to:

Name: _____
Telephone: _____
Cell: _____
E-mail: _____

And

The original invoice to be forwarded for verification to:

Public Works and Government Services Canada
Marine Systems Directorate
Defence and Major Projects Sector
11 Laurier Street, Place du Portage
Phase III, 6C2
Gatineau, Quebec
K1A 0S5
Attention: Chris Moore

2. Canada will only make payment upon receipt of a satisfactory invoice duly supported by specified release documents and any other documents called for under the Contract.

3. The Contractor shall not submit an invoice prior to the completion and acceptance of the Work or shipment of the items to which it relates.

7.6.2 Invoicing Instructions - Progress Claim

1. The Contractor must submit a claim for payment using form PWGSC-TPSGC 1111 http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/1111.pdf, Claim for Progress Payment.

Each claim must show:

(a) all information required on form PWGSC-TPSGC 1111;
(b) all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;

2. Applicable Taxes must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no Applicable Taxes payable as it was claimed and payable under the previous claims for progress payments.

3. The Contractor must prepare and certify one original and two (2) copies of the claim on form PWGSC-TPSGC 1111, and forward it to the Contracting Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

   The Contracting Authority will then forward the original and two (2) copies of the claim to the Contracting Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.

4. The Contractor must not submit claims until all work identified in the claim is completed.

7.6.3 Warranty Holdback

A warranty holdback of 5% of the total contract price as last amended (Applicable Taxes excluded) will be applied to the final claim for payment. This holdback will be payable by Canada upon the expiry of the 90 day warranty period(s) applicable to the Work. Applicable Taxes, as appropriate, is to be calculated and paid on the total amount of the claim before the 5% holdback is applied. At the time that the holdback is released, there will be no Applicable Taxes payable, as it was included in previous payments.

7.7 Certifications

7.7.1 Compliance

Compliance with the certifications 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 or 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.

7.8 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 Employment and Social Development Canada (ESDC)-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 ESDC will constitute the Contractor in default as per the terms of the Contract.

7.9 Applicable Laws

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

7.10 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 Supplemental General Conditions 1029, (2010-08-16), Ship Repairs;
(c) the General Conditions 2030, , General Conditions - Higher Complexity - Goods
(d) the General Conditions 1031-2, (2008-05-12), Contract Cost Principles;
(e) Annex “A”, Statement of Work;
(f) Annex “B”, Basis of Payment;
(g) Annex “C”, Federal Contractors Program for Employment Equity - Certification;
(h) Annex “D”, Insurance Requirements;
(i) Annex “E”, Warranty;
(j) Annex “F”, Procedure for Unscheduled Work;
(k) Annex “G”, Quality Control/Inspection;
(l) Annex “H”, Financial Bid Presentation Sheet;
(m) Annex “I”, Deliverables/Certifications
(n) the Contractor's bid dated _____ (insert date of bid), as amended_____ (insert date(s) of amendment(s) if applicable)

7.11 Insurance Requirements

The Contractor must comply with the insurance requirements specified in Annex "D". The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.

The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfil its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

The Contractor must forward to the Contracting Authority within **ten (10) working days** after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. Coverage must be placed with an Insurer licensed to carry out business in Canada. The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

7.12 Limitation of Contractor's Liability for Damages to Canada

1. This section applies despite any other provision of the Contract and replaces the section of the general conditions entitled "Liability". Any reference in this section to damages caused by the Contractor also includes damages caused by its employees, as well as its subcontractors, agents, and representatives, and any of their employees.

2. Whether the claim is based in contract, tort, or another cause of action, the Contractor's liability for all damages suffered by Canada caused by the Contractor's performance of or failure to perform the Contract is limited to $10 million per incident or occurrence to an annual aggregate of $20 million for losses or damage caused in any one year of carrying out the Contract, each year starting on the date of coming into force of the Contract or its anniversary. This limitation of the Contractor's liability does not apply to nor include:

(a) Any infringement of intellectual property rights;

(b) Any breach of warranty obligations;

(c) Any liability of Canada to a third party arising from any act or omission of the Contractor in performing the Contract; or

(d) Any loss for which the policies of insurance specified in the Contract or any other policies of insurance held by the Contractor would provide insurance coverage.

3. Each Party agrees that it is fully liable for any damages that it causes to any third party in connection with the Contract, regardless of whether the third party makes its claim against Canada or the Contractor. If Canada is required, as a result of joint and several liability, to pay a third party in respect of damages caused by the Contractor, the Contractor must reimburse Canada for that amount.

4. The Parties agree that nothing herein is intended to limit any insurable interest of the Contractor nor to limit the amounts otherwise recoverable under any insurance policy. The Parties agree that to the extent that the insurance coverage required to be maintained by the Contractor under this Contract or any additional insurance coverage maintained by the Contractor, whichever is greater, is more than the limitations of liability described in sub article (2), the limitations provided herein are increased accordingly and the Contractor shall be liable for the higher amount to the full extent of the insurance proceeds recovered.

5. If, at any time, the total cumulative liability of the Contractor for losses or damage suffered by Canada caused by the Contractor's performance of or failure to perform the Contract, excluding liability described under subsection 2(a), (b), (c) and (d) exceeds $40 million, either Party may terminate the Contract by giving notice in writing to the other Party and neither Party will make any claim against the other for damages, costs, expected profits or any other such loss arising out of the termination. However, no such termination or expiry of the Contact shall reduce or terminate any of the liabilities that have accrued to the effective date of the termination but which liabilities are subject to the limitations as specified in sub-article (1) through (4) above.

6. The date of termination pursuant to this Article, shall be the date specified by Canada in its notice to terminate, or, if the Contractor exercises the right to terminate, in a notice to the Contractor from Canada in response to the Contractor's notice to terminate. The date of termination shall be in Canada's discretion to a maximum of 12 months after service of the original notice to terminate served by either Party pursuant to sub-article 5, above.

7. Nothing shall limit Canada's other remedies, including Canada's right to terminate the Contract for default for breach by the Contractor of any of its obligations under this Contract, notwithstanding that the Contractor may have reached any limitation of its liability hereunder.

7.13 Sub-contracts and Sub-contractor List

The Contracting Authority is to be notified, in writing, of any changes to the list of subcontractors before commencing the work.

When the Contractor sub-contracts work, a copy of the sub-contract purchase order is to be passed to the Contracting Authority. In addition, the Contractor must monitor progress of sub-contracted work and inform the Inspection Authority on pertinent stages of work to permit inspection when considered necessary by the Inspection Authority.

7.14 Work Schedule and Reports

No later than **five (5) calendar days** after contract award, the preliminary work schedule provided with the bid must be revised, detailed and resubmitted in preparation to the contract award meeting.

The Contractor must provide a detailed work schedule showing the commencement and completion dates for the Work in the available work period, including realistic target dates for significant events.

During the work period the schedule is to be reviewed on an ongoing basis by the Inspection Authority and the Contractor, updated when necessary, and available in the Contractor's office for review by Canada's authorities to determine the progress of the Work.

7.15 Insulation Materials - Asbestos Free

All materials used to insulate or re-insulate any surfaces on board the vessel must meet Transport Canada Marine standards, for commercial marine work, and, for all work, be free from asbestos in any form. The Contractor must ensure that all machinery and equipment located below or adjacent to surfaces to be re-insulated are adequately covered and protected before removing existing insulation.

7.16 Trade Qualifications

The Contractor must use qualified, certificated (if applicable) and competent tradespeople and supervision to ensure a uniform high level of workmanship. The Technical Authority may request to view and record details of the certification and/or qualifications held by the Contractor's tradespeople. This request should not be unduly exercised but only to ensure qualified tradespeople are on the job.

7.17 ISO 9001:2008 - Quality Management Systems

In the performance of the Work described in the Contract, the Contractor must comply with the requirements of:

> ISO 9001:2008 - Quality management systems - Requirements, published by the International Organization for Standardization (ISO), current edition at date of submission of Contractor's bid.

The Contractor's quality management system must address each requirement contained in the standard, however, the Contractor is not required to be registered to the applicable standard.

7.18 Project Management Services

The Contractor is required to provide their own Project Management Team experienced and capable of successfully managing the ship repair contract as defined herein. Project management personnel, services and deliverables must comply with the requirements detailed in the contract.

1. Intent
(a) Job titles used in this annex are for clarity within this document only. The Contractor is free to choose job titles that suit its organization.

(b) The Contractor, through its Project Management Team, is responsible to discharge the duties and supply the deliverables required in the Contract and the Specifications.

(c) Project Management encompasses the direction and control of such functions as engineering, planning, purchasing, manufacturing, assembly, overhauls, installations and test and trials.

2. Project Manager
(a) The Contractor must supply an experienced Project Manager (PM).

(b) The PM must have experience in managing a project of this nature.

3. Project Management Team
Other than the Project Manager, the Contractor must assign and vary other job descriptions to suit its organization; provided however that the collective resume of its Project Management must provide for the effective control of the project elements including but not limited to:

i. Project Management
ii. Quality Assurance
iii. Planning and Scheduling

4. Reports
The following Management Reports and Documentation are to be prepared and maintained by the Contractor and submitted to Canada in accordance with the Contract or upon request by the Contracting Authority.

i. Production Work Schedule
ii Inspection Summary Report
Iii. Growth Work Summary

7.19 Quality Control Plan

The Contractor must implement and follow the Quality Control Plan (QCP) prepared according to the latest issue (at contract date) of ISO 10005:2005 Quality management - Guidelines for quality plans, approved by the Inspection and the Technical Authority. The QCP must describe how the Contractor will conform to the specified quality requirements of the Contract and specify how the required quality activities are to be carried out, including quality assurance of subcontractors. The Contractor must include a traceability matrix from the elements of the specified quality requirements to the corresponding paragraphs in the QCP. The QCP must be made available to the Inspection and Technical Authority for review and approval **within five (5) calendar days** after contract award.

The documents referenced in the QCP must be made available when requested by the Inspection Authority.

The Contractor must make appropriate amendments to the QCP throughout the term of the Contract to reflect current and planned quality activities. Amendments to the QCP must be acceptable to the Inspection Authority and the Technical Authority.

Refer to Annex "G" for details.

7.20 Inspection and Test Plan

The Contractor must in support of its Quality Control Plan (QCP), implement an approved Inspection and Test Plan (ITP).

The Contractor must provide at no additional cost to Canada, all applicable test data, all Contractor technical data, test pieces and samples as may reasonably be required by the Inspection Authority to verify conformance to contract requirements. The Contractor must forward at his expense such technical data, test data, test pieces and samples to such location as the Inspection Authority may direct.

Refer to Annex "G" for details.

7.21 Equipment/Systems: Inspection/Test

Inspections, Tests and Trials of Equipment, Machinery and Systems shall be conducted in accordance with the Specification. The Contractor is responsible for performing, or having performed, all Inspections, Tests and Trials necessary to substantiate that the materiel and services provided conform to contract requirements.

Refer to Annex "G" for details.

7.23 Environmental Protection

The Contractor and its sub-contractors engaged in the Work on a Crown vessel must carry out the Work in compliance with applicable municipal, provincial and federal environmental laws, regulations and industry standards.

The Contractor must have detailed procedures and processes for identifying, removing, tracking, storing, transporting and disposing of all potential pollutants and hazardous material encountered, to ensure compliance as required above. The contractor must maintain in force their Environmental Protection procedures through the course of the contract.

All waste disposal certificates are to be provided to the Technical Authority, with information copies sent to the Contracting Authority. Furthermore, additional evidence of compliance with municipal, provincial and federal environmental laws and regulations is to be furnished by the Contractor to the Contracting Authority when so requested.

The Contractor must have environmental emergency response plans and/or procedures in place. Contractor and subcontractor employees must have received the appropriate training in emergency preparedness and response. Contractor personnel engaging in activities which may cause environmental impacts or potential non-compliance situations, must be competent to do so on the basis of appropriate education, training, or experience.

7.24 Hazardous Waste

1. The Contractor acknowledges that sufficient information has been provided by Canada with respect to the location and estimated amount of hazardous materials such as asbestos, lead PCBs, silica or other hazardous materials or toxic substances.

2. The price includes all costs associated with the removal, handling, storage, disposal and/or working in the vicinity of hazardous materials such as asbestos, lead, PCBs, silica and other hazardous materials or toxic substances on board the vessel, including those costs resulting from the need to comply with applicable laws and regulations in relation to the removal, handling, disposal or storage of hazardous materials or toxic substances.

3. The completion date for the Work takes into account the fact that the removal, handling, storage, disposal and/or working in the vicinity of hazardous materials such as asbestos, lead, PCBs, silica and other hazardous materials or toxic substances may be affected by the need to comply with applicable

federal, provincial and municipal laws or regulations and that this will not be considered to be an excusable delay.

7.25 Supervision of Fueling and Disembarking Fuel

Not used

7.26 Fire Protection, Fire Fighting and Training

The Contractor must maintain in force their fire protection, firefighting and training procedures through the course of the Contract.

7.27 Loan of Equipment - Marine

The Contractor may apply for the loan of the Government special tools and test equipment particular to the subject vessel as identified in the Specifications. The provision of other equipment required for the execution of work in the Specifications is the sole responsibility of the Contractor.

Equipment loaned under this provision must be used only for work under this Contract and may be subject to demurrage charges if not returned on the date required by Canada. In addition, equipment loaned under the above provision must be returned in a like condition, subject to normal wear and tear.

A list of Government equipment that the Contractor intends to request must be submitted to the Contracting Authority within **three (3) days** of Contract Award to permit timely supply or for alternate arrangements to be made. The request must state the time frame for which the equipment is required.

Refer to Annex "I2" for Deliverables/Certifications.

7.28 Procedures for Design Change or Additional Work

SACC Manual Clause B5007C (2010-01-11) Procedures for Design Change or Additional Work

In addition, refer to Annex "F".

7.29 Vessel Unmanned Refits

Not used

7.30 Pre-Refit Meeting

A Pre-Refit meeting will be convened and chaired by the Contracting Authority at the Contractor's facility at a time to be determined. At that meeting the Contractor will introduce all its management personnel as per its organization chart, and Canada will introduce authorities. Details of ship's arrival and work commencement will be discussed.

7.32 Progress Meetings

Progress meetings, chaired by the Contracting Authority, will take place at the Contractor's facility as and when required, generally once a month. Interim meetings may also be scheduled. Contractor attendees at these meetings will, as a minimum, be its Contract (Project) Manager, Production Manager (Superintendent) and Quality Assurance Manager. Progress meetings will generally incorporate Technical meetings to be chaired by the Technical Authority

7.33 Outstanding Work and Acceptance

1. The Inspection Authority, in conjunction with the Contractor, will prepare a list of outstanding work items at the end of the work period. This list will form the annexes to the formal acceptance document for the vessel. A contract completion meeting will be convened by the Inspection Authority on the work completion date to review and sign off the form PWGSC-TPSGC1205, Acceptance. In addition to any amount held under the Warranty Holdback Clause, a holdback of twice the estimated value of outstanding work will be held until that work is completed.

2. The Contractor must complete the above form in three (3) copies, which will be distributed by the Inspection Authority as follows:

   (a) original to the Contracting Authority;
   (b) one copy to the Technical Authority;
   (c) one copy to the Contractor.

7.34 Scrap and Waste Material

Despite any other provision of the Contract, scrap and waste materials other than accountable material, derived from the Contract, will revert to the Contractor as part of the Contract Price.

7.35 Vessel Access by Canada

Canada reserves the right to have its personnel carry out limited work on equipment on board the vessel. This work will be carried out at times mutually acceptable to Canada and the Contractor.

7.36 Workers Compensation

The Contractor must maintain its account in good standing with the applicable provincial or territorial Workers' Compensation Board for the duration of the Contract.

7.37 Failure to Deliver

Time is of the essence of the Contract. Changes in the Completion date not caused by Canada are Contractor defaults, will prejudice Canada and are at the Contractor's expense. The Completion date will not be extended without consideration being provided by the Contractor acceptable to Canada in the form of adjustment to the price, warranty or services to be provided.

7.38 Licensing

The Contractor must obtain and maintain all permits, licenses and certificates of approval required for the work to be performed under any applicable federal, provincial or municipal legislation. The Contractor is responsible for any charges imposed by such legislation or regulations. Upon request, the Contractor must provide a copy of any such permit, license or certificate to Canada.

7.39 Care, Custody and Control

Supplemental General Conditions 1029 (2010-08-16) Ship Repairs Article 08 Where Vessel In Commission.

ANNEX “A”

STATEMENT OF WORK

Upgrade of Carrier HVAC Control System

Specification No: Spec #846.17
Date: 2017-08-15
Revision No: V3

Prepared by Marine Engineering
520 Exmouth Street
Sarnia, ON
N7T 8B1

Table of Contents

1.0 GENERAL NOTES

1.1 Identification

1.1.1 These General Notes describe the CCG requirements applicable to all accompanying Technical Specifications.

1.2 Work Period

1.2.1.1 The Contractor must plan on travelling to the Coast Guard Prescott Base for one day at the beginning of the design and programming phase of the work to collect all database information from the existing system required for the design and programming phase. Any change in location will be changed using PSPC 1379 form.

1.2.2 The design and programming part of the work in this specification will take place at the contractor facility between contract award and October 9th, 2017. Canada will award the contract at minimum 2 weeks prior to the install.

1.2.3 The installation, commissioning, troubleshooting and repair work period for this specification is between October 4th and October 17th, 2017. The work will take place at:

Canadian Coast Guard Base
401 King St. West, P.O. Box 1000
Prescott, Ontario
K0E 1T0

1.3 Official Language of Documentation

1.3.1 Canada must comply with the requirements of the Official Languages Act and related policies and directives issued by Treasury Board Secretariat. This vessel operates in a bilingual region; however its employees occupy unilingual English positions and many are unilingual English. All documentation that must be dealt with on the vessel must be in the English working language of the ship.

1.3.2 For the purposes of safety and efficiency, all documentation that is a deliverable for this contract must be in the English working language of the ship.

1.4 References

1.4.1 Applicable regulations and documentation:

FSSM Procedures	Title	Included Yes/No
10.A.6	Paint and Other Coatings	10.A.6 Paint and Other Coatings
10.A.7	Contractor Safety and Security	10.A.7 Contractor Safety and Security.pdf
7.A.1	Assessing Risk	7.A.1 Assessing Risk.pdf
7.B.4	Hotwork	7.B.4 Hotwork.pdf
7.B.5	Lockout and Tagout	7.B.5 Lockout and Tagout.pdf

7.B.6	Electrical Safety Working on Energized Electrical Conductors or Circuit Parts	7.B.6 Electrical Safety Working on Energized Electrical Conductors or Circuit Parts.pdf
Ship Specific	Vessel Specific - Asbestos Survey Report	CCGS Griffon - Asbestos Survey Report (September 2016).pdf
Publications		
70-000-000-EU-JA-001	Specification for the Installation of Shipboard Electronic Equipment	Specification for the Installation of Shipboard Electronic Equipment-eng.pdf
CSA W47.1	Certification of Companies for Fusion Welding of Steel Structures Division 2 Certification	
CSA W47.2	Certification of Companies for Fusion Welding of Aluminum	
CSA W59	Welded Steel Construction – Metal Arc Welding	
CSA W59.2	Welded Aluminum Construction	
CSA Z462-15	Workplace Electrical Safety	
CT-043-eq-eg-001	Canadian Coast Guard Welding Specification	Canadian Coast Guard Welding Specification-eng.pdf
IEC 60092	IEC Electrical Installations in Ships	
IEEE 45	IEEE Recommended Practice for Electrical Installation on Ships	
TP11469E	Guide to Structural Fire Protection	
TP127E	Transport Canada Marine Safety Electrical Standard	
ASHRAE Standard 135-2016	ASHRAE - Data Communication Protocol for Building Automation and Control Networks (ANSI Approved)	
ASHRAE Standard 15-2016 (packaged w/ Standard 34-2016)	Safety Standard for Refrigeration Systems and Designation and Classification of Refrigerants (ANSI Approved)	
Acts		
CSA	Canada Shipping Act	

CLC	Canada Labour Code	
Regulations		
MOHS	Maritime Occupational Health and Safety	

1.5 Occupational Health and Safety

1.5.1 The Contractor and all sub-Contractors must follow Occupational Health and Safety (OHS) procedures in accordance with applicable federal and provincial OHS regulations ensuring that Contractor activities are carried out in a safe manner and do not endanger the safety of any personnel.

1.5.2 The Contractor and the Contractor's employees, including any sub-Contractors must attend a safety orientation meeting of the vessel prior to the commencement of any work in order to familiarize the Contractor's employees with ship specific hazards and permit systems for work protocols as well as procedures for Security, Hazard Prevention, Hazard Intervention and Pre-Job Safety Assessments. The Contractor will have access to an uncontrolled copy of the Fleet Safety and Security Manual. The familiarization meeting will be led by the crew and will take place prior to the Contractor starting any work.

1.5.3 The Contractor must comply with the Fleet Safety and Security Manual, DFO/5737 and shipboard work instructions in addition to the applicable Canada Labour Code regulations while performing all work on board including the following:

1. Pre-Job Safety Assessments
2. Lock Out/Tag Out
3. Confined Space Entry
4. Hot Work
5. Work Aloft

1.5.4 For the purpose of the Lock Out/Tag Out procedure the Contractor must supply locks and locking devices for the Contractor's employees in addition to those provided by the Chief Engineer for the ship's crew.

1.5.5 The Contractor and Contractor's employees will have access to one designated washroom onboard the vessel. The Contractor will not have access to any other part of the vessel that is not directly related to the work in this specification.

1.6 Access to Worksite

1.6.1 The Contractor must ensure the Technical Authority (TA) and CG staff has unrestricted access to the worksite at all times during the contract period.

1.7 Workplace Hazardous Materials Information System (WHIMS)

1.7.1 The Contractor must provide the TA with Material Safety Data Sheets (MSDS) for all Contractor supplied WHIMS controlled products.

1.7.2 The TA will provide the Contractor with access to MSD sheets for all controlled products on the ship for all specified work items.

1.8 Smoking in the Work Space

1.8.1 The Contractor must ensure compliance with the Non- Smokers' Health Act. The Contractor must ensure that every employer, and any person acting on behalf of an employer, must ensure that persons refrain from smoking in any work space under the control of the employer. The Contractor must ensure that there is absolutely no smoking onboard the vessel.

1.9 Clean and Hazard Free Worksite

1.9.1 Before the Contractor starts any work on the vessel the Contractor’s Quality Assurance Representative and the TA must walk through each space and area where work is to take place, including access and removal routes and areas adjacent to those where the work is to be done as a result of this specification. The Contractor’s Quality Assurance Representative must take digital pictures of each area showing the outfit therein and download the photos in JPG format onto a USB Flash Drive. Each picture must be dated and labeled as to the location on the vessel. Copies of the pictures are to be provided to the TA and Technical Inspection (TI) for reference purposes within 48 hours of the start of the contract.

1.9.2 During the work period the Contractor must maintain work areas in a clean condition, free from debris and remove garbage daily. The Contractor is responsible for storage in a Contractor supplied container, and disposal of all debris and garbage related to this contract.

1.9.3 Areas that pose a hazard as a result of the specification work are to be secured and clearly identified by the Contractor with signage to advise and protect all personnel from the hazard in accordance with applicable Canada Labour Code requirements.

1.9.4 Upon completion of this contract, the Contractor is responsible for removal of all garbage generated from the work of this specification and for returning the vessel to the state of cleanliness in which the vessel was at the start of the contract period.

1.9.5 Once all known work and final clean-up has been completed the Contractor’s QA Representative and the TA must perform a ‘walk through’ of the vessel to view all areas where work was performed by the Contractor. Any deficiencies or damage noted must be recorded and compared to the photos and if deemed to have been caused by the Contractor as a result of the work the damage must be repaired by the Contractor at no cost to the Coast Guard.

1.10 Fire Protection

1.10.1 The Contractor must ensure the isolation, removal and installation of fire detection and suppression systems or any components thereof, is performed by a qualified technician.

1.10.2 When the fire detection or fire suppression system is deactivated or disabled by the Contractor during the contract, the system(s) must be recertified by a qualified

technician as fully functional. A signed and dated original copy of the certificate must be delivered to the TA before the end of the contract.

1.10.3 The Contractor must notify the TA and obtain written approval from the TA prior to disturbing, removing, isolating, deactivating / disabling or locking out any part of the fire detection or suppression systems, including heat and smoke sensors.

1.10.4 The Contractor must ensure protection against fire at all times including when working on the ship's fire detection and / or suppression system(s). This may be accomplished as suggested below and only with the written permission of the TA:

1. Disabling only one portion of a system at a time;
2. By maintaining system function using spares while work is in progress;
3. Other means acceptable to and approved by the TA.

1.11 Touch-up / Disturbed Paint

1.11.1 Unless stated otherwise the Contractor must supply and apply two coats of marine primer compatible with the vessel's existing coating system to all new and/or disturbed metal surfaces.

1.11.2 The Contractor must prepare all new and disturbed steelwork to the paint manufacturer's standards prior to painting.

1.12 CCG Employees and Others on the Vessel

1.12.1 CCG / DFO employees and other personnel such as other contractors, manufacturer's representatives and/or TCMS or Class surveyors may carry-out other work including work items not included in this specification, onboard the vessel during this work period. Every effort will be made by the TA to ensure this work and the associated inspections and/or surveys do not interfere with the Contractor's work.

1.13 Test Results and Data Book

1.13.1 The Contractor must develop a Test and Trials Plan which must include as a minimum, all tests and trials stated in the specification. This plan must be provided for CCG TA review 48 hours prior to the originally scheduled Tests and Trials commencement.

1.13.2 Should extra or new work be added during the contract period, the Test and Trials Plan must be updated by the Contractor to reflect the additional inspection, testing and trials of the extra/new work has taken place.

1.13.3 All tests, measurements, calibrations and readings must be recorded, signed by the person taking the measurements, dated and provided in report format both in hard copy and electronic format, to the TA and TCMS.

1.13.4 Recorded dimensions must be to a precision of three decimal places (unless otherwise stated) in the measuring system currently in use on the vessel.

1.13.5 The Contractor must provide to the TA current and valid calibration certificates for all instrumentation used in the Test and Trials Plan showing that the instruments have been calibrated in accordance with the manufacturer's instructions.

1.13.6 Hard copy reports must be bound in standard 3-ring binders, type written on letter size paper. Electronic copies must be in unprotected Adobe PDF format and provide on USB-KEY media. The Contractor must provide 1 hard copies and 1 electronic copy of all reports.

1.13.7 All documentation from the contract period must be inserted in a data book and delivered to the TA on completion of the contract.

1.13.8 For any drawings requested, the drawings must be plotted on standard ANSI paper size paper – minimum ANSI B (11" x 17"). Two copies must be provided.

1.13.9 Also the drawings must be provided in AutoCAD 2010 DWG format (as a minimum – more recent versions are acceptable) and must be on USB-KEY media. The drawings must not be password protected. One (1) copy must be provided.

1.14 Contractor Supplied Materials and Tools

1.14.1 The Contractor must ensure all materials are new and unused. The Contractor must provide the Contracting Authority with evidence that all components provided by the Contractor are new and manufactured recently (less than 2 years). Canada will not accept equipment refurbished, reworked or rebuilt.

1.14.2 The Contractor must ensure replacement material such as jointing, packing, insulation, small hardware, oils, lubricants, cleaning solvents, preservatives, paints, coatings etc. are in accordance with the equipment manufacturer's drawings, manuals and/or instructions.

1.14.3 Where no particular item is specified or where substitution must be made, the TA must approve the substituted item in writing. The Contractor must provide information about materials used, certificate of grade and quality of various materials to the TA and TI prior to use.

1.14.4 The Contractor must provide all equipment, devices, tools and machinery such as cranage, staging, scaffolding and rigging necessary for the completion of the work in this specification.

1.15 Government Supplied Materials & Tools

1.15.1 All tools are Contractor supplied unless otherwise stated in the technical specifications.

1.15.2 Where tools are supplied by the TA they must be returned by the Contractor in the same condition as when they were borrowed. Borrowed tools must be inventoried and signed for by the Contractor on receipt and return to the TA.

1.15.3 Any Government supplied material (GSM) must be received by the Contractor and stored in a secure warehouse or storeroom having a controlled environment appropriate for the equipment as per manufacturer's instructions.

1.16 Restricted Areas

1.16.1 The Contractor must not enter the following areas except to perform work as required by the specifications: all cabins, offices, workshops, Engineers' office, Wheelhouse, Control Room, all washrooms, Galley, Mess Rooms, Lounge areas and any other areas restricted by signage.

1.16.2 The Contractor must give the TA 24 hours advance notice prior to working in any accommodation areas or office spaces. This will allow CCG adequate time to move personnel and secure the areas.

1.17 Contractor Inspections and Protection of Equipment and the Worksite

1.17.1 The Contractor must coordinate an inspection with the TA and Inspection Authority (IA) on the condition and location of items to be removed to gain access to a location to carry out the work prior to the commencement of any work.

1.17.2 Any damage incurred as a result of the Contractor's work and that is attributable to the Contractor's work performance must be repaired by the Contractor at his expense.

1.17.3 Materials used in any replacement or repairs must meet the criteria for Contractor supplied material noted above in section Contractor Supplied Materials and Tools.

1.17.4 The Contractor must protect all equipment and surrounding areas from damage. Work areas are to be protected from the ingress of water, welding and blasting grit etc.

1.17.5 Temporary covers to work areas must be installed.

1.18 Recording of Work in Progress

1.18.1 The TA and TI may record any work in progress using various means including, but not limited to photography and video, digital or film.

1.19 Lead Paint and Paint Coatings

1.19.1 The Contractor must not use lead based paints.

1.19.2 CG ships have been painted with lead based paints in the past and as a result some of the Contractor's processes such as grinding, welding and burning may release this lead from the coatings. The Contractor must ensure that coatings in the affected work areas are tested for lead content and that the work is performed in accordance with applicable Federal and Provincial regulations. Results of the lead testing must be a deliverable for this contract.

1.20 Asbestos Containing Materials

1.20.1 The Contractor must not use any asbestos containing materials.

1.20.2 Handling of any asbestos containing materials must be performed and supervised by personnel trained and certified in the removal of asbestos in accordance with Federal, Provincial and Municipal regulations in effect and in accordance with the Fleet Safety and Security Manual. The Contractor must provide the TA with disposal certificates for all asbestos containing material removed from the vessel indicating that the disposal was in accordance with Federal, Provincial and Municipal regulations in effect.

1.21 Removed Materials and Equipment

1.21.1 All removed equipment as a result of this specification must remain the property of the Coast Guard unless otherwise instructed in the specification sections.

1.22 Welding Certification

1.22.1 For any work requiring the application of fusion welding for steel structures the Contractor and/or the sub-Contractor welders must be certified by the Canadian Welding Bureau in accordance with CSA Standards W47.1, latest revision – Certification of Companies for Fusion Welding of Steel Division 2 Certification as a minimum.

1.22.2 For any item requiring the application of fusion welding for stainless steel structures, the Contractor or the Sub-Contractors must be certified in accordance with the Canadian Welding Bureau, CSA\ACNOR AWS; Division 16 certification – latest revision.

1.22.3 For any item requiring the application of fusion welding to aluminum structures, the Contractor or the Sub-Contractors must be certified in accordance with the Canadian Welding Bureau, CSA\ACNOR W47.2; Division 3 certification – latest revision.

1.22.4 The Contractor must provide documentation to the Technical Authority clearly identifying the welding certification of all employees performing any welding included in this specification prior to the commencement of any welding.

1.22.5 For all items requiring the application of fusion welding for work in this specification the Contractor must comply with the latest revision of the Canadian Coast Guard Welding Specification CT-043-eq-eg-001.

1.23 Electrical Installations

1.23.1 All electrical installations and repairs must be carried out in accordance with the latest revisions of Transport Canada Marine Safety Electrical Standard TP127E.

1.23.2 All installations of electronic equipment must be carried out in accordance with Canadian Coast Guard Telecommunications and Electronics publication CGTS-3(E) entitled “General Specification for the Installation of Shipboard Electronic Equipment”.

2.0 GENERAL PARTICULARS OF EXISTING VESSEL

Name: CCGS Griffon

Type: Twin Screw, Medium Icebreaker / Navaids Tender

Class of Voyage: Inland Waters Class I Fire Extinguishing and Lifesaving Appliances for a vessel of Class X.

Year Built: 1970

Shipbuilder: Davie Shipbuilding Ltd., Lauzon, Quebec

Principal Dimensions:

- Length O.A. 234' – 0" (71.32m)
- Length B.P. 214' – 0" (65.23m)
- Breadth Mld. 49' – 0" (14.94m)
- Depth Mld. 21' – 6" (6.55m)
- Draft (Mld Design) 15' – 6 ¼" (4.73m)

Tonnages:

- Gross 2211.87 L.T. (2252 Metric Tonnes)
- Reg. Net 751.90 L.T. (765.56 Metric Tonnes)
- Displacement 15' – 6 ¼" 2944 L.T. (2991 Metric Tonnes)
- Deadweight Max 744 L.T. (757.5 Metric Tonnes)

Propulsion:
Twin screw, fixed pitch, diesel electric, total power 2x2000 S.H.P. Main machinery: four (4) Fairbanks Morse 38D8-1/8" diesel engines driving four (4) Westinghouse DC two wire single armature, non-reversing variable voltage generators.

3.0 HVAC SOFTWARE AND CONTROLS PERFROMANCE REQUIREMENTS

3.1 Identification

3.1.1 The Canadian Coast Guard has a requirement to upgrade the HVAC software and controls for the existing Carrier Comfortview Network.

3.1.2 The Contractor must plan on travelling to the Coast Guard Prescott Base, 401 King St. West, Prescott, Ontario, for one day at the beginning of the design and programming phase of the work to collect all database information from the existing system required for the design and programming phase. Any change in location will be changed using PSPC 1379 form.

3.1.3 The Contractor must supply and install the latest version i-Vu software or equivalent, new user laptop, controllers and I/O extenders compatible with the new software and existing remaining system components.

3.1.4 The contractor must have the capability and experience to read, interpret and program the existing Carrier CCN software and integrate the new hardware and software into the existing system.

3.1.5 All peripheral equipment including wiring to and from the new controls must remain. All system peripherals must be retained and put to work in the new system. All electrical enclosure must remain. All new hardware must fit neatly in the existing enclosures. All communication backbones must remain.

3.1.6 The Contractor must program into the new software all existing system functionalities and control algorithms.

3.1.7 The Contractor must program into the new Contractor supplied lap-top detailed interactive graphic representations of each deck of the ship as per the as fitted general arrangement drawing provided.

3.1.8 The Contractor must replace the existing refrigerant sensors in both Upper Fan Room and Lower Fan Room with new sensors compatible with 407C refrigerant.

3.1.9 The system must be set to work and all functions tested. All errors to programming encountered during commissioning will be repaired.

3.1.10 The Contractor will provide training on the new system’s operation, maintenance and troubleshooting.

3.1.11 All programming, drawings and documentation specific to the installation onboard the CCGS Griffon must become the intellectual property of Canada once the system has been commissioned. All historical data generated by the system must become the intellectual property of Canada throughout the life of the equipment.

3.2 References: (Reference material available from Contract Authority upon request: chris.moore@pwgsc.gc.ca)

3.2.1 Drawings

Drawing Number	Description	Electronic Filename
521-822-010 sh1 of 9	HVAC Modernization Layout & Details	521-822-010 S1.pdf
521-822-010 sh2 of 9	HVAC Modernization Equipment Control Strategy	521-822-010 S2.pdf
521-822-010 sh3 of 9	HVAC Modernization Block Diagram	521-822-010 S3.pdf
521-822-010 sh4 of 9	HVAC Modernization Electrical Conn. Diagram	521-822-010 S4.pdf
521-822-010 sh5 of 9	HVAC Modernization Fan Room Safety Panel	521-822-010 S5.pdf
521-822-010 sh6 of 9	HVAC Modernization Reheater Panel #1, Boat Dk.	521-822-010 S6.pdf
521-822-010 sh7 of 9	HVAC Modernization Reheater Panel #2, Poop Dk.	521-822-010 S7.pdf
521-822-010 sh8 of 9	HVAC Modernization Reheater Panel #3, Upper Dk. Stbd	521-822-010 S8.pdf
521-822-010 sh9 of 9	HVAC Modernization Reheater Panel #4, Upper Dk Port	521-822-010 S9.pdf
CMG05-111-GA sheets 1-2	General Arrangement, as fitted	G05111ga1.pdf & G05111ga2.pdf

3.2.2 Graphics Files

Name	Description	Electronic Filename
Menu	Cover Page with selections	MAIN PAGE.pdf
SF-1	Upper Air Handler	GRIFFON SF-1.pdf
SF-2	Lower Air Handler	GRIFFON SF-2.pdf
Upper Deck	Cabin & Work Area Temps Upper Deck	GRIFFON UPPER DECK REV.1.pdf
Poop Deck	Cabin & Work Area Temps Poop Deck	GRIFFON POOP DECK REV.1.pdf
Boat Deck	Cabin & Work Area Temps Boat Deck	GRIFFON BOAT DECK REV.1.pdf
Bridge Deck	Cabin & Work Area Temps Bridge Deck	GRIFFON BRIDGE DECK REV.1.pdf

3.2.3 Manuals

Name	Electronic Filename
CCGS Griffon H.V.A.C System	Griffon HVAC Manual.pdf

3.2.4 Standards

3.2.4.1 ANSI/ASHRAE Standard 135-2016 - Data Communication Protocol for Building Automation and Control Networks, latest revision and all related addendums;

3.2.4.2 ANSI/ASHRAE Standard 15-2016 (packaged w/ Standard 34-2016) - Safety Standard for Refrigeration Systems and Designation and Classification of Refrigerants, latest revision and all related addendums;

3.2.4.3 TP 127 Latest Edition, Ship's Electrical Standards.

3.2.5 Background

3.2.5.1 Griffon accommodation HVAC system is comprised of a circa 2003 Carrier Comfortview Ver. 3.0 Network which supervises and controls via a standalone laptop and RS232/486 Converter.

3.2.5.2 The system is split into Upper and Lower Units. The Upper System (SF-1) is comprised of a Carrier Model 39M size 08, 3500 CFM air handling unit and condenser for air conditioning. The Lower System (SF-2) is comprised of a Carrier Model 39M size 06 air handling unit and condenser unit for air conditioning.

3.2.5.3 Each system uses two 6400 CCN Controllers – one for communication and control of the air handling equipment and air conditioning and one for communication and control inside the accommodations for local control of the reheaters and temperature feedbacks.

3.2.5.4 Both systems are equipped to provide:

1. Central steam heat via steam to air heating coil in air handler,
2. Air handler equipment status indication,
3. Local zone heating control via electrical reheaters and thermostats, and safety shutdown circuits,
4. Nortec Humidification,
5. Carrier Transicold Sea Horse Central Air conditioning,
6. Belimo Outside/Recirc. damper control to control fresh air input and modulation according to temperature and humidity conditions inside and out. This includes freeze protection of the steam coil during extreme cold conditions,
7. All temperature monitoring required providing data acquisition at each stage of the system, exterior temperature, with override in each cabin and accommodation workspaces.
8. The NO2 sensors and CO sensors have been disconnected, removed and are not required in the new system and all references in the programming have been deleted.
9. The refrigerant sensors are Vulcain Model VA-201T-Q2 and there is one fitted in each fan room.

3.2.6 Components to remove and replace:

1. Carrier Comfortview Ver. 3.0 software;
2. Chief Engineer's cabin HVAC standalone laptop;
3. RS232/486 Converter;
4. 4 – 6400 CCN controllers Part # CEPL130201 on the network:
    a) CC_64_12: SF-1 Reheats #1, Address 0.12;
    b) CC_64_10: SF-1 Air Handler, Address 0.10;
    c) CC_64_11: SF-2 Air Handler, Address 0.11;
    d) CC_64_13: SF-2 Reheats #2, Address 0.13.

5. 12 - I/O Extenders, Part # CEPL130203 are fitted to handle the additional I/O in the system;
6. 407 refrigerant sensors.

3.2.7 Components remaining to adapt new system to:

3.2.7.1 The Contractor must keep and adapt to the existing components fitted to the HVAC system on the Griffon, except where otherwise specified in this statement of work.

3.2.7.2 Remaining components includes:

1. Upper HVAC unit;
2. Lower HVAC unit;
3. Nortec Humidifiers, NH Electric Steam Humidifier;
4. Kele steam valves actuators, model KAS-142;
5. Local re-heaters solid state power controllers Chromalox PDS SCR 4001, and associated re-heaters thermostats, safety shut downs;
6. In cabins and accommodations Carrier T55 space temperature sensors with override;
7. Exterior temperature thermistors, Carrier #HH79NZ017Carrier Transicold Sea Horse Central Air conditioning;
8. Belimo Outside/Recirc. damper control, including freeze protection of the steam coil during extreme cold conditions;
9. All power and control wires, unless otherwise specified.

3.3 TECHNICAL REQUIREMENTS

3.3.1 Control System Supply

3.3.1.1 The control system must consist of a laptop that communicates with a high-speed, standalone BACNET network or equivalent consisting of 4 controllers and required I/O modules.

3.3.1.2 The new controllers must have the same power requirements as the existing units and must connect to the existing power supplies with a minimum of modifications.

3.3.1.3 The new system must be impervious to power outages. Should the new system require UPS protection, the Contractor is responsible for supplying and installing the equipment.

3.3.1.4 The new system must have fail safes built into the algorithms to prevent damage due to steam coils freezing should the system lose power or during periods of extreme cold weather.

3.3.1.5 The new system must have safety shutdowns programmed to control the dampers, reheater controls, A/C compressors, upon shutdown of a fan.

3.3.2 Supply of Operator Interface/Laptop

3.3.2.1 The Contractor must supply and install in the Chief Engineer’s cabin a new laptop to monitor and make program changes to the entire system.

3.3.2.2 The Contractor supplied lap-top must have at minimum the following specifications:

1. Fully compatible with the new system.
2. Dual Core Processor.
3. At least 1.5 GB RAM.
4. 10Mbps or higher LAN communications capability.
5. Windows 10 latest version.
6. Supports Edge, IE, Google Chrome, Mozilla Firefox, Safari browsers.
7. Have a maximum footprint measuring 15 inches wide by 12 inches deep.

3.3.2.3 The supplied laptop must be provided with all software to be configured as a portable operator's terminal. Operator must be able to connect configured terminal to the system network or directly to each controller for programming, setting up, and troubleshooting.

3.3.2.4 Operators must be able to access all operational information in the control system via supplied laptop computer utilizing web browser. The user must also have local connectivity to communicate with each controller separately when required.

3.3.2.5 Any installation or commissioning software used to operate, program, troubleshoot and modify the system, graphics and program must be pre-installed on the laptop.

3.3.2.6 Any tools required for making graphic changes must be provided with interface.

3.3.2.7 The computer and network must be completely separate from ship’s DFO LAN. The computer must be connected via USB converter to the BACNET or equivalent network.

3.3.2.8 The interface must gather data from this system and generate web pages accessible through a conventional web browser on the Chief Engineer’s new contractor supplied HVAC laptop

3.3.2.9 Interface and controllers must communicate using BACnet or equivalent protocol. The interface and control network backbone must communicate using ISO 8802-3 (Ethernet) Data Link/Physical layer protocol and BACnet/IP addressing as specified in ANSI/ASHRAE 135, BACnet Annex J.

3.3.3 Program Minimum User Requirements

3.3.3.1 The user interface program must allow the user to execute the following functions as a minimum, through the web browser interface:

1. The interface must contain navigation links that allow the operator to quickly navigate from the home screen to any piece of equipment in the system, and then return to the home screen. The present system is arranged in a hierarchical fashion, such as navigating from the home screen to a system data point, then to a specific feature in the configuration, and then to a specific cabin or piece of equipment, a similar arrangement is preferred.
2. Users must be able to download memory from the system database to each controller.

3. Log In and Log Out. The new system must have a user and password authentication system that requires an operator to log in before viewing or editing any data, and which can be configured to limit the privileges of an individual operator. The Contractor must create and provide to the Chief Engineer an administrator user and password with unlimited access for modifications to the program, including all system parameters and configuration programming.
4. Point-and-click Navigation. Operator interface must be graphically based and must allow operators to access graphics for equipment and physical areas throughout the vessel using point-and-click navigation.
5. View and Adjust Equipment Properties. Operators must be able to view controlled equipment status and to adjust operating parameters such as set points, PID gains, on and off controls, and sensor calibration.
6. View and Respond to Alarms. Users must be able to view a list of currently active system alarms, to acknowledge each alarm, and to manually clear alarms as needed. Alarms or links to alarms must be provided on a contiguous list so the operator can quickly view all alarms. The list must have a defined capacity for a typical alarm retention of one month.
7. View and Configure Trends. Users must be able to view a trend graph of each trended point and to edit graph configuration to display a specific time period or data range. The user must be able to create custom trend graphs to display on the same page data from multiple trended points.
8. View and Configure Reports. Users must be able to run preconfigured reports, to view report results, and to customize report configuration to show data of interest. The Contractor must pre-program a report consisting of the list of all programmed parameters values at the time of printing.
9. Manage Control System Hardware. Users must be able to view controller status, to restart (reboot) each controller, and to download new control software to each controller.
10. The program must have the capability built into it to control the heating mode and cooling mode automatically and manually.
11. The program must have the capability to operate in “Fan Only” mode where the dampers are modulated to control the air temperature within the ship in conjunction with the ship’s reheaters. The air handlers must operate normally if both heating and cooling mode are manually turned off.
12. The Contractor must program and provide a summary page link for each piece of equipment in the system. This page must include the current values of all critical I/O points and must allow the operator to force binary points on or off and to force analog points to any value within their range.

3.3.4 Graphics Minimum User Requirements

3.3.4.1 The interface must depict each mechanical system and vessel deck plan by multiple point-and-click graphics. All existing and new components of the system must be represented and all control points must be interactive and represented in their physical location. The existing graphics in GIF format are the property of the Coast Guard and can be modified to display the new arrangement.

3.3.4.2 The system graphics must provide the minimum features :

1. User interface must be graphical and must include at least one graphic per piece of equipment or occupied zone, graphics for A/C condenser units and air handling units, and graphics that summarize conditions on each deck of the ship. Indicate thermal comfort on deck plan summary graphics using dynamic colors to represent zone temperature relative to zone setpoint.
2. Functionality: User graphics must allow operator to monitor system status, to view a summary of the most important data as shown in the reference grahics supplied for each controlled zone or piece of equipment, to use point-and-click navigation between zones or equipment, and to edit set points and other specified parameters.
3. Animation: User graphics must be able to animate by displaying different image files for changed object status.
4. Alarm Indication: Indicate areas or equipment in an alarm condition using color or other visual indicator.
5. Format: Graphics must be saved in an industry-standard format such as BMP, JPEG, PNG, or GIF. Web-based system graphics must be viewable on browsers compatible with supported browsers. Web graphic format must require no plug-in (such as HTML and JavaScript) or must only require widely available no-cost plug-ins.

3.3.5 Hardware Requirements

3.3.5.1 All hardware must be approved by Transport Canada Marine Safety (TCMS) or TCMS Approved Recognized Organization for installation aboard ships in Canada, such as CSA and UL.

3.3.5.2 The Contractor is responsible for supplying all hardware for the upgrade of the HVAC control system. This must include controllers, I/O modules, new fusing, mounting hardware, additional wiring, terminations and plugs.

3.3.5.3 Space in the controller cabinets is limited. The hardware must fit in the existing controller cabinets such that there is adequate room for maintenance and troubleshooting.

3.3.5.4 The available space in the reheat panels is approximately 10 inches high by 14 inches wide by 5-3/4 inches deep. The available space in the A/C and Air Handler Panels is approximately 14 inches high by 6 inches wide by 8 inches deep. It is the Contractor’s responsibility to ensure all new and existing hardware fits in the available space within the existing panels.

3.3.5.5 The hardware must be mounted on the back of the controller panels.

3.3.6 Refrigerant Sensors

3.3.6.1 The Contractor must supply two new Honeywell Vulcain or equivalent quality, manufactured within the last 2 years, refrigerant sensors compatible with 407C refrigerant and the new control system.

3.3.6.2 The sensors must utilize the existing power wiring and must output a digital signal to the control system when the refrigerant reaches threshold levels established under ANSI/ASHRAE Standard 15-2016, Safety Standard for Refrigeration Systems and Designation and Classification of Refrigerants, within the space.

3.3.6.3 The sensors must be installed in a way that allows removal and re-installation by a person working alone.

3.3.6.4 The sensors must be supplied with a current calibration certificate valid for a minimum of one year and a user's manual.

4.0 CARRIER HVAC SOFTWARE AND CONTROLS REPLACEMENT

4.1 General

4.1.1 The Contactor must install and commission the new HVAC software controls onboard the CCGS Griffon.

4.1.2 The installation, commissioning, troubleshooting and repair work period for this specification is between October 4th and October 17th, 2017. The work will take place at:

Canadian Coast Guard Base
401 King St. West, P.O. Box 1000
Prescott, Ontario
K0E 1T0

4.1.3 For the purpose of bidding, the Contractor must include all travel and cost of living expenses for the above mentioned location.

4.1.4 Any change to the location will be addressed using the Public Service Procurement Services (PSPC) 1379 form.

4.2 Removals

4.2.1 Software Backup

4.2.1.1 The Contractor must create an accurate backup of all existing Carrier programs and associated software onboard the Griffon prior to commencing removals. The backup programming must be used as the reference for development of the functionalities and graphics interface of new programming.

4.2.1.2 The Contractor must record the configuration and addressing of all controllers in the network prior to disassembly.

4.2.2 Hardware Removals

4.2.2.1 The Contractor must isolate and lock out all electrical supplies prior to commencing work. The Contractor must consult the supplied reference drawings for sources to isolate and lock out.

4.2.2.2 The Contractor must identify and label all wires to all peripheral equipment identified to be disconnected. Unless otherwise specified, the original wiring to the existing equipment must be reused in the new installation where practicable.

4.2.2.3 The Contractor must disconnect, release from the back of the panel and remove all controllers and I/O extenders. All removed controllers and extenders must be returned to CG.

4.2.2.4 The Contractor must disconnect and remove the refrigerant sensors located in the Upper and Lower Fan Rooms. They must be discarded as electronic waste. The Contractor is responsible for providing a disposal certificate that proves compliance with Federal, Provincial and municipal regulations.

4.2.2.5 All other removals required to complete the work in this specification is the responsibility of the Contractor.

4.3 Installation

4.3.1 The Contractor must install the new controllers and I/O modules using new zinc plated lockable machine screws. The units must be mounted on the back of each panel.

4.3.2 The Contractor must connect power to the new controller and I/O modules using new wires originating from the original terminals in the panels. New wires must be compliant with the original equipment manufacturer’s requirement for the equipment and TP-127.

4.3.3 The Contractor must connect the controllers and I/O modules to the network utilizing the existing #18 AWG shielded communication cables.

4.3.4 The Contractor must reconnect all I/O using the existing wiring. Where existing wiring is too short for the new components installed, the Contractor must replace the wires with longer ones of the same capacity as the existing wire.

4.3.5 All new wires must be labelled with their origin and function.

4.3.6 The Contractor must connect the existing communication network to the new user laptop via new contractor supplied USB Converter. The converter must be mounted on the bulkhead close to the laptop in the Chief Engineer’s cabin and be easily accessible for troubleshooting and maintenance.

4.3.7 The Contractor must mount and connect the new laptop to the USB converter using contractor supplied cables. The laptop must be supplied with all required programming and software already installed.

4.3.8 The Contractor must install the new refrigerant sensors in place of the existing ones using the existing wiring and new corrosion resistant locking fasteners.

4.3.9 The Contractor must commission and test the new system in the presence of the Chief Engineer. The Contractor must tune all PID controls for stable operation.

4.3.10 The Contractor must backup and copy the new program once all modifications have been tested.

4.4 Proof of Performance

4.4.1 Inspection

4.4.1.1 The Contractor must submit the final wiring in each panel to inspection by the TI, prior the closing of the panels.

4.4.2 Testing/Trials

4.4.2.1 The Contractor must develop a commissioning and testing plan for the entire system to prove the correct communication and operation of all peripheral equipment. The system must be operated and tested in both heating and air conditioning mode. The commissioning and testing plan must be submitted to the TA prior to commencing removal of any equipment.

4.4.2.2 Upon completion of the installation, the Contractor must test the new 407c refrigerant detection sensors in the upper and lower fan rooms to the threshold value in the presence of the TI to prove compliance with ANSI/ASHRAE Standard 15-2016, Safety Standard for Refrigeration Systems and Designation and Classification of Refrigerants.

4.4.2.3 The Contractor must test all program functions and modifications in the presence of the Chief Engineer to prove their correct operation and adjust all system settings to the satisfaction of the Chief Engineer.

4.4.2.4 After satisfactory review of the result, the Contractor must backup the modified programming using a unique file name incorporating the date it was modified and the name GRIFFONHVAC.

4.5 Deliverables

4.5.1 Intellectual Property (IP)

4.5.1.1 The terms of Intellectual Property rights are set out in SACC Supplemental General Conditions 4007 – Canada to Own Intellectual Property Rights in Foreground Information.

4.5.1.2 For clarity, Foreground Information includes, but is not limited to, all HVAC control system as fitted drawings; software foreground programming; and operation, maintenance, parts and training manuals produced or developed for this work specification and the installation onboard the CCGS Griffon. This information will be used in the operation, maintenance, servicing, set points adjustments, and future programming and upgrades to the HVAC control system.

4.5.2 Documents

4.5.2.1 The Contractor must provide one electronic copy and one paper copy of a summary report to the TA prior to the end of the contract including the following:

1. Work done and any outstanding issues the programmer encountered;
2. Detailed description of the new system functions, including operation, maintenance and troubleshooting procedures;

3. A copy of the backup of the program after all testing and commissioning has been completed, including all graphic files must be supplied to the Chief Engineer in USB-Key format;
4. Updated as fitted schematics of all wiring modifications for the install of the new equipment;
5. OEM operation and maintenance manuals of all new equipment supplied;
6. Calibration certificates for the new refrigerant sensors valid for minimum of one year;
7. Bill of materials including make, model and part numbers of all new components.

4.5.3 Training

4.5.3.1 The Contractor must provide two separate non-consecutive days (8 hours) of onboard training at the Canadian coast Guard Base in Prescott Ontario, one for each crew, for 2-4 people per crew on the HVAC software operation, maintenance and troubleshooting. Any change in location will be changed using PSPC 1379 form.

4.5.3.2 One training day will occur immediately after commissioning. The Contractor must plan on travelling to the Coast Guard Prescott Base on a separate occasion for the second training day.

4.5.3.3 Crew training must be completed after HVAC system has been fully tested by the Contractor and is deemed to be operational.

4.5.3.4 The training must cover all knowledge to acquire to perform all tasks listed in 3.3.3.

ANNEX “B”

BASIS OF PAYMENT PRICE

Annex “B” will form the Basis of Payment for the resulting Contract and should not be filled in at the bid submission stage.

B1 Contract Firm Price

A)	**Known Work** For work as stated in Article 7. 1, Specified in Annex "A" and detailed in the attached Pricing Data Sheets, for a FIRM PRICE of:	**$**
B)	**Taxes as applicable of line a) only**	**$**
C)	**Total Firm Price Applicable Taxes Included:**	**$**

B2 Unscheduled Work

The Contractor will be paid for unscheduled work arising, as authorized by Canada. The authorized unscheduled work will be calculated as follows:

"Number of hours (to be negotiated) X $_____, being the Contractor's firm hourly charge-out labour rate which includes overhead, consumables, and profit, plus net laid-down cost of materials to which will be added a mark-up of 10%, plus applicable taxes, of the total cost of material and labour. The firm hourly charge-out labour rate and the material mark-up will remain firm for the duration of the Contract and any subsequent amendments."

B2.1: Notwithstanding definitions or usage elsewhere in this document, or in the Contractor's Cost Management System, when negotiating hours for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package.

Elements of Related Labour Costs identified in B2.2 below, will not be negotiated, but will be compensated for in accordance with B2.2.

B2.2: Allowance for Related Labour Costs such as: Management, all Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Certification Inspecting and Reporting, Estimating, and Preparing Unscheduled Work Submissions will be included as Overhead for the purposes of determining the Charge-out Labour Rate entered in line B2 above.

B2.3: The 10% mark-up rate for materials will also apply to subcontracted costs. The mark-up rate includes any allowance for material and subcontract management not allowed for in the Chargeout Labour Rate. The Contractor will not be entitled to a separate labour component for the purchase and handling of materials or subcontract administration.

Pro-rated Prices Unscheduled Work

Hours and prices for unscheduled work shall be based on comparable historical data applicable to similar work at the same facility, or shall be determined by pro-rating the quoted Work costs in the Contract when in similar areas of the vessel.

B3 Overtime

The Contractor must not perform any overtime under the Contract unless authorized in advance and in writing by the Contracting Authority. There will be no overtime payment for Known Work. Any request for payment must be accompanied by a copy of the overtime authorization and a report containing the overtime performed pursuant to the written authorization. Payment for authorized overtime will be calculated as follows:

For unscheduled work, the Contractor will be paid the authorized overtime hours at the quoted charge-out labour rate plus the following premium rates:

For Time and one half: $ _____ per hour; or,

For Double time $ _____ per hour

The above premiums will be calculated by taking the average hourly direct labour rate premiums, plus certified fringe benefit, plus profit on labour premium and fringe benefits. These rates will remain firm for the duration of the Contract, including all amendments and are subject to audit if considered necessary by Canada.

B4 Pricing Data Sheets

Parameters from the Pricing Data Sheets will be used at Canada's sole discretion in the determination of unscheduled work price.

ANNEX "C"

FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY - CERTIFICATION

I, the Bidder, by submitting the present information to the Contracting Authority, certify that the information provided is true as of the date indicated below. The certifications provided to Canada are subject to verification at all times. I understand that Canada will declare a bid non-responsive, or will declare a contractor in default, if a certification is found to be untrue, whether during the bid evaluation period or during the contract period. Canada will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply with any request or requirement imposed by Canada may render the bid non-responsive or constitute a default under the Contract.

For further information on the Federal Contractors Program for Employment Equity visit Employment and Social Development Canada (ESDC)-Labour's website.

Date:_____(YYYY/MM/DD) (If left blank, the date will be deemed to be the bid solicitation closing date.)

Complete both A and B.

A. Check only one of the following:

( ) A1. The Bidder certifies having no work force in Canada.

( ) A2. The Bidder certifies being a public sector employer.

( ) A3. The Bidder certifies being a federally regulated employer being subject to the *Employment Equity Act.*

( ) A4. The Bidder certifies having a combined work force in Canada of less than 100 employees (combined work force includes: permanent full-time, permanent part-time and temporary employees [temporary employees only includes those who have worked 12 weeks or more during a calendar year and who are not full-time students]).

A5. The Bidder has a combined workforce in Canada of 100 or more employees; and

( ) A5.1. The Bidder certifies already having a valid and current Agreement to Implement Employment Equity (AIEE) in place with ESDC-Labour.

OR

( ) A5.2. The Bidder certifies having submitted the Agreement to Implement Employment Equity (LAB1168) to ESDC-Labour. As this is a condition to contract award, proceed to completing the form Agreement to Implement Employment Equity (LAB1168), duly signing it, and transmit it to ESDC-Labour.

0**B. Check only one of the following:**

( ) B1. The Bidder is not a Joint Venture.

OR

( ) B2. The Bidder is a Joint Venture and each member of the Joint Venture must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification. (Refer to the Joint Venture section of the Standard Instructions)

ANNEX “D”

INSURANCE REQUIREMENTS

The Contractor is responsible for deciding if insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any insurance acquired or maintained by the Contractor is at its own expense and for its own benefit and protection. It does not release the Contractor from or reduce its liability under the Contract.

ANNEX “E”

WARRANTY

Warranty Procedures

1. Scope

a. The following are the procedures that suit the particular requirements for warranty considerations for a vessel on completion of a refit.

2. Reporting Failures With Warranty Potential

a. The initial purpose of a report of a failure is to facilitate the decision as to whether or not to involve warranty and to generate action to effect repairs. Therefore in addition to identification, location data, etc. the report must contain details of the defect. Warranty decisions as a general rule are to be made locally and the administrative process is to be in accordance with procedures as indicated.

b. These procedures are necessary as invoking a warranty does not simply mean that the warrantor will automatically proceed with repairs at his expense. A review of the defect may well result in a disclaimer of responsibility, therefore, it is imperative that during such a review the Department is directly represented by competent technical authority qualified to agree or disagree with the warrantor's assertions. Since the INSPECTION AUTHORITY has the closest and most active involvement of the contracted work completed this agency must assume this role.

3. Procedures

a. Immediately it becomes known to the Ship's Staff that an equipment/system is performing below accepted standards or has become defective, the procedures for the investigation and reporting are as follows:

i. The vessel advises the Technical Authority when a defect, which is considered to be directly associated the refit work, has occurred.

ii. On review of the Specification and the Acceptance Document, the Technical Authority in consort with Ship's Staff is to complete the Tombstone Data and section 1 of the Warranty Claim Form Appendix 1 of Annex "D" and forward the original to the Contractor for review with a copy to the PWGSC contracting Authority. If the PWGSC Contracting or INSPECTION AUTHORITY is unable to support warranty action, the Defect Claim Form will be returned to the originator with a brief justification. (It is to be noted that in the latter instance PWGSC will inform the Contractor of its decision and no further action will be required of the Contractor.

Warranty defect claims may be forwarded in hard copy, by fax or by e-mail whichever format is the most convenient.

iii.. Assuming the Contractor accepts full responsibility for repair, the Contractor completes Section 2 and 3 of the Warranty Claim Form, returns it to the INSPECTION AUTHORITY who confirms corrective action has been completed, and who then distributes the form to the Technical Authority and the PWGSC Contracting Authority.

b. In the event that the Contractor disputes the claim as a warranty defect, or agrees to share, the contractor is to complete Part 2 and 3 of the Warranty Claim Form with the appropriate information and forward it to the Contracting Authority who will distribute copies as necessary.

c. When a warranty defect claim is disputed by the Contractor, the Technical Authority may arrange to correct the defect by in-house resources or by contracting the work out. All associated costs must be tracked and recorded as a possible charge against the contractor by PWGSC action. Material costs and manhours expended in correcting the defect are to be recorded and entered in Section 5 of the warranty defect claim by the Technical Authority who will forward the warranty defect claim to the PWGSC Contracting Authority for action. Defective parts of equipment are to be retained pending settlement of claim.

d. Defective equipment associated with potential warranty should not normally be dismantled until the Contractor's representative has had the opportunity to observe the defect. The necessary work is to be undertaken through normal repair methods and costs must be segregated as a possible charge against a contractor by PWGSC action.

4. Liability

a. Agreement between the Contracting Authority, INSPECTION AUTHORITY, Technical Authority and the Contractor will result in one of the following conditions:

i. The Contractor accepts full responsibility for costs to repair or overhaul under the warranty provisions of the contract;

ii. The Technical Authority accepts full responsibility for repair and overhaul of item concerned; or

iii. The Contractor and the Technical Authority agree to share responsibility for the costs to repair or overhaul the unserviceable item, in such cases the PWGSC Contracting Authority will negotiate the best possible sharing arrangement.

b. In the event of a disagreement as in paragraph 5c, PWGSC will take necessary action with the Contractor while the Technical Authority informs its Senior Management including pertinent data and recommendations.

c. The total cost of processing warranty claims must include accommodation and travel costs of the Contractor's employees as well as equipment/system down time and operational constraints. Accordingly, the cost to remediate the defect, in manhours and material, will be discussed between the Contracting/Inspection Authorities and the Technical Authority to determine the best course of action.

5. Alongside Period For Warranty Repairs and Checks

a. If at all possible, an alongside period for the vessel is to be arranged just before the expiration of the 90 day warranty period. This alongside period is to provide time for warranty repair and check by the contractor.

Travaux publics et Services gouvernementaux Canada

Public Works and Government Services Canada

Warranty Claim

Réclamation De Garantie

Vessel Name – Nom de navire	File No. – N° de dossier	Contract No. - N ° de contrat

Customer Department – Ministère client	Warranty Claim Serial No. Numéro de série de réclamation de garantie

Contractor – Entrepreneur	**Effect on Vessel Operations** **Effet sur des opérations de navire** Critical Degraded Operational Non-operational Critique Dégradé Opérationnel Non-opérationnel

1. Description of Complaint – Description de plainte

Contact Information – l'information de contact	
_____ Name – Nom Tel. No. - N ° Tél	_____ _____ Signature – Signature Date

2. Contractor's Investigative Report – Le rapport investigateur de l'entrepreneur

3. Contractor's Corrective Action – La modalité de reprise de l'entrepreneur

Contractor's Name and Signature – Nom et signature de l'entrepreneur

Date of Corrective Action - Date de modalité de reprise

Client Name and Signature - Nom et signature de client

Date

4. PWGSC Review of Warranty Claim Action – Examen d'action de réclamation de garantie par TPSGC

Signature – Signature

Date

ANNEX "F"

PROCEDURE FOR PROCESSING UNSCHEDULED WORK

1. Purpose

The Unscheduled Work Procedure has been instituted for the following purposes:

a. To establish a uniform method of dealing with requests for Unscheduled Work;

b. To obtain the necessary Technical Authority approval and Contracting Authority authorization before Unscheduled Work commences;

c. To provide a means of maintaining a record of Unscheduled Work requirements including Serial Numbers, dates, and accumulated cost. The Contractor shall have a cost accounting system that is capable of assigning job numbers for each Unscheduled Work requirement so that each requirement can be audited individually.

2. Definitions

a. An Unscheduled Work Procedure is a contractual procedure whereby changes to the scope of Work under the Contract may be defined, priced and contractually agreed to. Such changes may arise from;

i. "Work Arising" from opening up of machinery and/or surveys of equipment and material, or

ii. "New Work" not initially specified but required on the Vessel.

b. The procedure does not allow for the correction of deficiencies in the Contractor's Bid.

c. No unscheduled work may be undertaken by the Contractor without written authorization of the Contracting Authority except under emergency circumstances described in Sub. Paragraph 3(b). Unscheduled Work

d. Work undertaken without written Contracting Authority authorization will be considered the Contractor's responsibility and cost.

e. The appropriate PWGSC form is the final summary of the definition of the Unscheduled Work requirement, and the costs negotiated and agreed to.

3. Procedures

a. The procedure involves the electronic form PWGSC 1379 for refit and repair and will be the only form for authorizing all Unscheduled Work.

b. Emergency measures required to prevent loss or damage to the Vessel which would occur if this procedure were followed, shall be taken by the Contractor on its own authority. The responsibility for the cost of such measures shall be determined in accordance with the terms and conditions of the Contract.

c. The Technical Authority will initiate a work estimate request by defining the Unscheduled Work requirement. It will attach drawings, sketches, additional specifications, other clarifying details as appropriate, and allocate their Serial Number for the request.

d. Notwithstanding the foregoing, the Contractor may propose to the Technical Authority in writing, either by letter or some type of Defect Advice Form (this is the Contractor's own form) that certain Unscheduled Work should be carried out.

e. The Technical Authority will either reject or accept such Proposal, and advise the Contractor and Contracting Authority. Acceptance of the Proposal is not to be construed as authorization for the work to proceed. If required, the Technical Authority will then define the Unscheduled Work requirement in accordance with Sub. Paragraph 3. (c).

f. The Contractor will electronically submit its Proposal to the Contracting Authority together with all price support, any qualifications, remarks or other information requested.

The price support shall demonstrate the relationship between the scope of work, the Contractor's estimated costs and its selling price. It is a breakdown of the Contractor's unit rates, estimates of person hours by trade, estimate of material cost per item for both the contractor and all of its subcontractors including quotations, estimates of any related schedule impact and an evaluation of the contractor's time required to perform the Unscheduled Work.

g. The Contractor shall provide copies of purchase orders and paid invoices for Subcontracts and/or materials, including stocked items, in either case. The Contractor shall provide a minimum of two quotations for Subcontracts or materials. If other than the lowest, or sole source is being recommended for quality and/or delivery considerations, this shall be noted. On request to the Contractor, the Contracting Authority shall be permitted, to meet with any proposed Subcontractor or material supplier for discussion of the price and always with the Contractor's representative present.

h. After discussion between the Contracting Authority and the Contractor and if no negotiation is required, the Contracting Authority will seek Technical Authority confirmation to proceed by signing the form. The Contracting Authority will then sign and authorize the Unscheduled Work to proceed.

i. In the event the Technical Authority does not wish to proceed with the work, it will cancel the proposed Unscheduled Work through the Contracting Authority in writing.

j. In the event the negotiation involves a Credit, the appropriate PWGSC form will be noted as "credit" accordingly.

k. In the event that the Technical Authority requires Unscheduled Work of an urgent nature or an impasse has occurred in negotiations, the commencement of the Unscheduled Work should not be unduly delayed and should be processed as follows, in either case. The Contractor will complete the appropriate PWGSC 1379 form indicating the offered cost and pass it to the Contracting Authority. If the Technical Authority wishes to proceed, the Technical Authority and the Contracting Authority will sign the completed PWGSC form with the notation, "CEILING PRICE SUBJECT TO DOWNWARD ADJUSTMENT", and allocate a Serial Number having the suffix "A". The work will proceed with the understanding that following an audit of the Contractor's actual costs for completing the described work, the cost will be finalized at the ceiling price or lower, if justified by the audit. A new PWGSC form will then be completed with the finalized costs, signed and issued with the same Serial Number without the suffix "A", and bearing a notation that this form is replacing and canceling the form having the same Serial Number with the suffix "A".
NOTE:
PWGSC forms bearing Serial Numbers with a suffix "A" shall not to be included in any contract amendments, and therefore no payment shall be made until final resolution of the price and incorporation into the contract.

4. Amendment to Contract or Formal Agreement

The Contract will be amended from time to time in accordance with the Contract terms to incorporate the costs authorized on the appropriate PWGSC forms.

ANNEX "G"

QUALITY CONTROL/INSPECTION

G1 Quality Control Plan

The Contractor must implement and follow the Quality Control Plan (QCP) prepared according to the latest issue (at contract date) of ISO 10005:2005 quality management - Guidelines for quality plans, approved by the Inspection and the Technical Authority. The QCP must describe how the Contractor will conform to the specified quality requirements of the Contract and specify how the required quality activities are to be carried out, including quality assurance of subcontractors. The Contractor must include a traceability matrix from the elements of the specified quality requirements to the corresponding paragraphs in the QCP. The QCP must be made available to the Inspection and Technical Authority for review and approval **within five (5) calendar** days after contract award.

The documents referenced in the QCP must be made available within two (2) working days when requested by the Inspection Authority.
The Contractor must make appropriate amendments to the QCP throughout the term of the Contract to reflect current and planned quality activities. Amendments to the QCP must be acceptable to the Inspection Authority and the Technical Authority.

G2 Inspection and Test Plan (ITP):

1. The Contractor must prepare an Inspection and Test Plan (ITP) comprising individual inspection and test plans for each specification item of this project, in accordance with the Quality Standard and its Quality Control Plan. The ITP must be submitted to the Inspection Authority for review and amended by the Contractor to the satisfaction of the Inspection Authority.
a. Each ITP must contain all inspection points identified in the Specification highlighting any mandatory points that must be witnessed by the Inspection Authority and other "hold" points imposed by the Contractor to ensure the quality of the work.
b. Milestone delivery date for the ITP is given in the Contract, however individual ITPs should be forwarded for review as developed.

2. Coding:
a. Each Inspection and Test Plan (ITP) is to be coded for identification clearly demonstrating a systematic approach similar to the following (Contractor's system should be defined in its Quality Control Plan):
i. Prefixes for Inspections, Test and Trials:
- Prefix "1" is a Contractor inspection, i.e. 1H-10-01, 1H-10-02;
- prefix "2" is a Contractor post repair test, i.e. 2H-10-01; and
- prefix "3" is a Contractor post repair trial, i.e. 3H-10-01.

b. Specification items followed by assigned sequence numbers for inspection processes within each Specification Item; and
c. Cross reference to a verification document number

G3 Inspection and Test Plan Criteria:

Inspection criteria, procedures and requirements are stated in the specifications, drawings, technical orders and reference standards invoked by the Specifications. Test and trial documentation may also be included or referenced in the Specifications. An individual Inspection and Test Plan (ITP) is required for each Specification item.

a. All ITPs must be prepared by the Contractor in accordance with the above criteria, its Quality Plan, and must provide the following reference information:

i. the ship's name;
ii. the Specification item number;
iii. equipment/system description and a statement defining the parameter which is being inspected;
iv. a list of applicable documents referenced or specified in the inspection procedure;
v. the inspection, test or trial requirements specified in the Specification;
vi. the tools and equipment required to accomplish the inspection;
vii. the environmental conditions under which the inspections are to be conducted and the tolerances on the inspection conditions;
viii. a detailed step-by step procedure of how each inspection is to be performed, conformance parameters, accept/reject criteria and recording of results, deficiencies found and description of corrective action(s) required;
ix. name and signature of the person who prepared the plan, date prepared and amendment level; and,
x. names and signatures of the persons conducting and witnessing the inspection, test or trial.

4. Contractor Imposed Testing:

Tests and trials in addition to those given in the Specification must be approved by the Inspection Authority.

a. Amendments: Amendment action for the Inspection and Test Plans must be ongoing throughout the refit and reflect the inspection requirements for unscheduled work. Amendments must be submitted as developed, but not less frequently than once every second week.

G4 Conduct of Inspection

1. Inspections must be conducted in accordance with the ITP and as detailed in G4.

2. The Contractor must provide its own staff or subcontracted staff to conduct inspections, tests and trials; excepting that Technical Authority or Inspection Authority personnel may be designated in the specifications, in which case the Contractor must ensure that its own staff are provided in support of such inspection/test/trial.

3. The Contractor must ensure that the required conditions stated in the ITP prevail at the commencement of, and for the duration of, each inspection/test/trial.

4. The Contractor must ensure that personnel required for equipment operation and records taking during the inspection/test/trial are briefed and available at the start and throughout the duration of the inspection/test/trial. Tradesmen or FSRs who may be required to effect minor changes or adjustments in the installation must be available at short notice.

5. The Contractor is to coordinate the activities of all personnel taking part in each inspection/test/trial and ensure that safe conditions prevail throughout the inspection/test/trial.

G5 Inspection Records and Reports

1. The Contractor on the inspection record, test or trials sheets as applicable must record the results of each inspection. The Contractor must maintain files of completed inspection records consistent with the Quality Standard and its Quality Plan for this project.

2. The Contractor's QC representative (and the FSR when required) must sign as having witnessed the inspection, test or trial on the inspection record. The Contractor must forward originals of completed inspection records, together with completed test(s) and/or trials sheets to the Inspection Authority as they are completed.

3. Unsatisfactory inspection/test/trial results, for which corrective action cannot be completed during the normal course of the inspection/test/trial, will require the Contractor to establish and record the cause of the unsatisfactory condition to the satisfaction of the Inspection Authority. Canada representatives may assist in identification where appropriate.

4. Corrective action to remove cause of unsatisfactory inspections must be submitted to the Inspection Authority in writing by the Contractor, for approval before affecting such repairs and rescheduling of the unsatisfactory inspection/test/trial. Such notices must be included in the final records passed to the Inspection Authority.

5. The Contractor must undertake rectification of defects and deficiencies in the Contractor's installation or repair as soon as practicable. The Contractor is responsible to schedule such repairs at its own risk.

6. The Contractor must reschedule unsatisfactory inspections after any required repairs have been completed.

7. Quality Control, Inspection and Test records that substantiate conformance to the specified requirements, including records of corrective actions, must be retained by the Contractor for three (3) years from the date of completion or termination of the Contract and must be made available to the Inspection Authority upon request.

G6 Inspection and Trials Process

1. Drawings and Purchase Orders
a. Upon receipt of two (2) copies of each drawing or purchase order, the designated Inspection Authority will review its content against the provisions of the specification. Where discrepancies are noted, the Inspection Authority will formally advise all concerned, in writing using a Discrepancy Notice. The resolution of any such discrepancy is a matter for consultation between the Contractor and other Crown Authorities.

The Inspection Authority is NOT responsible for the resolution of discrepancies.

2. Inspection
a. Upon receipt and acceptance of the Contractor’s ITP, inspection will consist of a number of Inspection Points supplemented by such other inspections, tests, demonstrations and trials as may be deemed necessary by the Inspection Authority to permit him to certify that the work has been performed in compliance with the provisions of the specification. The Contractor must be responsible for notifying the designated Inspection Authority of when the work will be available for inspection, sufficiently in advance to permit the designated Inspection Authority to arrange for the appropriate inspection.

b. The Inspection Authority will inspect the materials, equipment and work throughout the project against the provisions of the specification and, where non-conformances are noted, will issue appropriate **INSPECTION NON-CONFORMANCE REPORTS.**

c. The Contract requires the implementation of a Quality Assurance/Quality Control system, so the Inspection authority must require that the Contractor provide a copy of its internal inspection report pertaining to a work item before conducting the requested inspection. If third party inspections are required by the Contract (e.g. inspections by a certified CWB 178.2 welding inspector), the reports of these inspections must be required before the Work is inspected by the PWGSC Inspection Authority.

d. The QA/QC system is a requirement, so if the documentation is presented to the Inspection Authority before an inspection stating that the Work is satisfactory but the Inspection Authority finds that the Work has not been satisfactorily inspected, the Inspection Authority must issue an Inspection Non-conformance Report against the Work and another against the failure of the Contractor's QA/QC system.

e. Before carrying out any inspection, the PWGSC Inspection Authority must review the requirements for the Work and the acceptance and/or rejection standards to be applied. Where more than one standard or requirement is called up and they are potentially conflicting, the Inspection Authority must refer to the order of precedence in the Contract to determine the standard or requirement to be applied.

3. Inspection Non-conformance report
a. An Inspection Non-conformance report will be issued for each non-conformance noted by the Inspection Authority. Each report will be uniquely numbered for reference purposes, will be signed and dated by the Inspection Authority, and will describe the non-conformance.

b. When the non-conformance has been corrected by the Contractor and has been re-inspected and accepted by the Inspection Authority, the Inspection Authority will complete the Report by adding an applicable signed and dated notation.

c. At the end of the project, the content of all Inspection Non-conformance Reports which have not been signed-off by the Inspection Authority will be transferred to the Acceptance Documents before the Inspection Authority's certification of such documents.

4. Tests, Trials, and Demonstrations
a. To enable the Inspection Authority to certify that the Work has been performed satisfactorily, in accordance with the Contract and Specifications, the Contractor must schedule, co-ordinate, perform, and record all specified Tests, Trials and Demonstrations required by the Inspection Authority.

b. Where the Specifications contain a specific performance requirement for any component, equipment, sub-system or system, the Contractor must test such component, equipment, sub-system or system to the satisfaction of the Inspection Authority, to prove that the specified performance has been achieved and that the component, equipment, sub-system or system performs as required by the specifications.

c. Tests, trials and demonstrations must be conducted in accordance with a logical, systematic schedule which must ensure that all associated components and equipment are proven before sub-systems demonstration or testing, and that sub-systems are proven before system demonstration or testing.

d. Where the Specifications do not contain specific performance requirements for any component, equipment, sub-system or system, the Contractor must demonstrate such component, equipment, sub-system or system to the satisfaction of the Inspection Authority .

e. The Contractor must submit its Inspection and Test Plan as detailed in G2.

f. The Contractor must co-ordinate each test, trial and demonstration with all interested parties, including the Inspection Authority; Contracting and Technical Authorities; regulatory authorities; Classification Society; Sub-contractors; etc. **The Contractor must provide the Inspection Authority and other Crown Authorities with a minimum of five (5) working days notice of each scheduled test, trial, or demonstration.**

g. The Contractor must keep written records of all tests, trials, and demonstrations conducted as detailed in G5. The Contractor may utilize the **PWGSC STANDARD TESTS & TRIALS RECORD SHEETS** which can be customized by the Contractor to suit individual test or trial requirements. These Record Sheets are available from the Inspection Authority in digital format.

h. The Contractor must in all respects be responsible for the conduct of all tests and trials in accordance with the requirements of the Contract.

i. The Inspection Authority and the Technical Authority reserve the right to defer starting or continuing with any sea trials for any reasonable cause including but not limited to adverse weather, visibility, equipment failure or degradation, lack of qualified personnel and inadequate compliance with safety standards.

ANNEX "H"

Financial Bid Presentation Sheet

H1 Price for Evaluation

A)	**Known Work** For work as stated in Part 1 Clause 1.2, Specified in Annex "A" and detailed in the attached Pricing Data Sheets Appendix 1 of Annex "H", for a FIRM PRICE of:	**$**_____
B)	Unscheduled Work Contractor Labour Cost:Estimated labour hours at a firm Charge-out Labour Rate, including overhead and profit for evaluation purpose only: 2500 person hours X $_____ per hour for a PRICE of: See Article H2.1 and H2.2 below. Overtime premium for time and one half: Estimated hours for evaluation purposes only: 250 person hours X $ _ per hour for a PRICE of: See Article H3 Below. Overtime premium for double time: Estimated hours for evaluation purposes only: 250 person hours X $_____ per hour for a PRICE of: See Article H3 below.	**$**_____ **$**_____ **$**_____
E)	EVALUATION PRICE Appicable Taxes Excluded, [A + B + C+ D] For an EVALUATION PRICE of (Applicable Taxes excluded):	**$**_____

H2 Unscheduled Work

The Contractor will be paid for unscheduled work arising, as authorized by Canada. The authorized unscheduled work will be calculated as follows:

"Number of hours (to be negotiated) X $_____, being the Contractor's firm hourly charge-out labour rate which includes overhead, consumables, and profit, plus net laid-down cost of materials to which will be added a mark-up of 10 percent, plus Applicable Taxes, if applicable, of the total cost of material and labour. The firm hourly charge-out labour rate and the material mark-up will remain firm for the duration of the Contract and any subsequent amendments."

H2.1: Notwithstanding definitions or usage elsewhere in this document, or in the Contractor's Cost Management System, when negotiating Hours for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package.

Elements of Related Labour Costs identified in H2.2 below, will not be negotiated, but will be compensated for in accordance with Note H2.2. It is therefore incumbent upon the bidder to have bid appropriately which will result in fair compensation, regardless of their Cost Management System.

H2.2: Allowance for Related Labour Costs such as: Management, all Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Certification Inspecting and Reporting, and Estimating and preparing unscheduled work Submissions will be included as Overhead for the purposes of determining the Charge-out Labour Rate entered in line H2 above.

H2.3: The 10% mark-up rate for materials will also apply to subcontracted costs. The mark-up rate includes any allowance for material and subcontract management not allowed for in the Chargeout Labour Rate. The Contractor will not be entitled to a separate labour component for the purchase and handling of materials or subcontract administration.

H3 Overtime

The Contractor must not perform any overtime under the Contract unless authorized in advance and in writing by the Contracting Authority. There will be no overtime payment for Known Work. Any request for payment must be accompanied by a copy of the overtime authorization and a report containing the overtime performed pursuant to the written authorization. Payment for authorized overtime will be calculated as follows:

For unscheduled work, the Contractor will be paid the authorized overtime hours at the quoted charge-out labour rate plus the following premium rates:

For Time and one half: $ _____ per hour; or,

For Double time $ _____ per hour

The above premiums will be calculated by taking the average hourly direct labour rate premiums, plus certified fringe benefit, plus profit on labour premium and fringe benefits. These rates will remain firm for the duration of the Contract, including all amendments and are subject to audit if considered necessary by Canada.

ANNEX H - APPENDIX 1

PRICING DATA SHEETS

Section	Description	Total Hours	Total Labour Cost	Total Material Cost	Total FSR& Sub-Contractors Cost	Total Firm Price	Unit Cost
2.0	General Notes						
	Project Management (detailed in 7.18)		$	$	$	$	
	Data book/ test and trials plan		$	$	$	$	
3.0	HVAC Software & Controls Performance Requirements						
3.3.1	Control System supply (as detailed in 3.3.1.1 to 3.3.1.5 & Sections 3.3.3, 3.3.4, 3.3.5		$	$	$	$	
3.3.2	Supply of Operator Interface / Laptop (as detailed in 3.3.2.1 to 3.3.2.9 & Sections 3.3.3, 3.3.4, 3.3.5		$	$	$	$	
3.3.6	Refrigerant Sensors – as detailed in 3.3.6.1 to 3.3.6.4		$	$	$	$	
4.0	Carrier HVAC Software & Controls Replacement						
4.2	Removals						
4.2.1.1	Software Backup		$	$	$	$	
4.2.1.2	Configuration mapping/ recording		$	$	$	$	
4.2.2.1	Hardware Removals – Isolate & Lock out		$	$	$	$	

Section	Description	Total Hours	Total Labour Cost	Total Material Cost	Total FSR& Sub-Contractors Cost	Total Firm Price	Unit Cost
4.2.2.2	Hardware Removals – Identify/ labelling		$	$	$	$	
4.2.2.3	Hardware Removals – disconnect controllers/ extenders		$	$	$	$	
4.2.2.4	Hardware Removals – refrigerant sensors / Disposal cert.		$	$	$	$	
4.3	Installation						
4.3.1	New Controllers & I/O modules		$	$	$	$	
4.3.2	Power Connection		$	$	$	$	
4.3.3	Controller & I/O connection		$	$	$	$	
4.3.5	Wire labelling		$	$	$	$	
4.3.6 & 4.3.7	Laptop connection/ mounting		$	$	$	$	
4.3.8	New refrigerant sensors		$	$	$	$	
4.3.9	System Commission		$	$	$	$	
4.3.10	System backup and copy		$	$	$	$	
4.4	Proof of Performance						
4.4.1.1	Inspections		$	$	$	$	
4.4.2.1	Testing/ Trial plans		$	$	$	$	
4.4.2.2 to 4.4.2.4	System testing and backup		$	$	$	$	
4.5	Deliverables						
4.5.2.1	Documentation (Drawings / Manuals/ certificate) – As detailed in 4.5.2.1		$	$	$	$	

Section	Description	Total Hours	Total Labour Cost	Total Material Cost	Total FSR& Sub-Contractors Cost	Total Firm Price	Unit Cost
4.5.3	Training - As detailed in 4.5.3.1 to 4.5.3.4		$	$	$	$	
TOTALS			$	$	$	$	

ANNEX "I"

DELIVERABLES/CERTIFICATIONS

I1 Mandatory Tender Deliverables Check List

Notwithstanding deliverable requirements specified within the bid solicitation and its associated Technical Specification (Annex A), mandatory deliverables that must be submitted with the Bidder's tender to be deemed responsive are summarized below.

The Bidder must submit a completed Annex "I1" Deliverables/ Certifications.

The following are mandatory and the Bidder's submission will be evaluated against the requirements as defined herein. The Bidder must be determined to be compliant on each item to be considered responsive.

Item	Description	Completed and Attached
1	Invitation To Tender document part 1 page 1 completed and signed;	
2	Completed Annex "HI" Financial Bid Presentation Sheet", clauses H1 through H6;	
3	Completed Pricing Data Sheets, per clause 3.1 Section II, Annex "H",Appendix 1;	
4	Completed Annex "I1" Deliverables/Certifications;	
5	Changes to Applicable Laws (if any), as per clause 2.4	
6	Integrity Provisions - Associated Information, section 5.1.1	
7	Federal Contractors Program for Employment Equity, Complete section 5.1.2	
8	Proof of good standing with Worker's Compensation Board, as per clause 6.3	
9	Proof of valid Labor Agreement or similar instrument covering the work period, as per clause 6.4	
10	Preliminary Work Schedule , per clause 6.5;	
11	If Registered its Valid ISO 9001-2008 Certification, as per clause 6.7	
12	Objective evidence of documented Health and Safety System, as per clause 6.8;	
13	Objective evidence of documented Fire Protection, Fire Fighting and Training Procedure, as per clause 6.9	
14	Insurance Requirements, as per clause 6.11	
15	Project Management as per clause 6.13	
16	List of subcontractors, as per clause 6.14	
17	Example of its Quality Control Plan, as per clause 6.15	

18	Example of an Inspection and Test Plan as per clause 6.16	
19	Details of Environmental Emergency Response Plan, Details of Formal Environmental Training as per Clause 6.17	

I2 Deliverables after Contract Award

Item	Description	Reference	Due By
1	Insurance requirements as per Annex "D"	Clause 7.11 and Annex ‘’D’’	10 Working Days after contract award
3	Revised Work Schedule	Clause 7.15	5 calendar days after contract award
4	The Contractor’s Quality Control Plan	Clause 7.20	5 calendar days after contract award
5	The list of Government specialized loaned equipment that the Contractor intends to request.	Clause 7.27	3 calendar days after contract award

ANNEX "J"

Code of Conduct - List of Directors

1._____

2._____

3._____

4._____

5._____

6._____

7._____

8._____

9._____

10._____