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
Place Bonaventure, portail Sud-Oue
800, rue de La Gauchetière Ouest
7e étage, suite 7300
Montréal
Québec
H5A 1L6
Bid Fax: (514) 496-3822

REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION

Proposal 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.

Proposition 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 sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Issuing Office - Bureau de distribution
TPSGC/PWGSC
Place Bonaventure, portail Sud-Oue
800, rue de La Gauchetière Ouest
7e étage, suite 7300
Montréal
Québec
H5A 1L6

Title - Sujet
Governors for the CCGS Radisson

Solicitation No. - N° de l'invitation	**Date**
F7049-180061/A	2019-03-21

Client Reference No. - N° de référence du client
F7049-180061

GETS Reference No. - N° de référence de SEAG
PW-$MTE-150-15283

File No. - N° de dossier	**CCC No./N° CCC - FMS No./N° VME**
MTE-8-41152 (150)	

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM
on - le 2019-05-02

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:	**Buyer Id - Id de l'acheteur**
Giguère, Réjean	mte150

Telephone No. - N° de téléphone	**FAX No. - N° de FAX**
(514) 409-7393 ( )	( ) -

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:
MINISTERE DES PECHES ET DES OCEANS
NGCC DES GROSEILLIERS
101 BOUL. CHAMPLAIN
Québec
Québec
G1K 7Y7
Canada

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	**Delivery Offered - Livraison proposée**
.	

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

Telephone No. - N° de téléphone
Facsimile No. - N° de télécopieur

Name and title of person authorized to sign on behalf of Vendor/Firm (type or print)
Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)

Signature **Date**

Canada

REQUEST FOR PROPOSAL

DELIVERY AND INSTALLATION OF A NEW ENGINE GOVERNOR CONTROL SYSTEM FOR THE CCGS PIERRE RADISSON

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PART 1 - GENERAL INFORMATION

1.1 Introduction

The bid solicitation is divided into seven (7) 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;

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, 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 contain the Statement of Work, the Basis of Payment and other pertinent documentation.

1.2 Requirement

1.2.1 Background:

The *CCGS Pierre Radisson* is a type 1200 vessel that is one in a fleet of three nearly identical icebreakers built between 1978 and 1982. This project is being carried out within the framework of a Vessel Life Extension program (VLE) that could eventually be extended to the other two similar vessels, *CCGS Des Groseilliers* and *CCGS Amundsen*. The contract will apply to the *CCGS Pierre Radisson* only, but must include options for performing similar work on the other two (2) vessels.

Although some technical improvements have been made to the *CCGS Pierre Radisson* in recent years, some of the engine governors system's components are original and are approaching the end of their useful life. This poses several problems in terms of spares provisioning, in addition to causing general deterioration of all systems over the years. The mandate of the VLE program is to guarantee the reliability of these systems for an additional 15 years.

1.2.2 The Requirement is:

1.2.2.1: To deliver and install a new Engine Governor Control System (EGCS) that will meet or exceed the requirements contained in Annex A - Statement of Work (SOW),

1.2.2.2: To carry out, within the Work Period of the Contract, all unscheduled work authorized by the Contracting Authority as per Annex G, Procedure for Processing Unscheduled Work.

1.2.2.3: Work location: Quebec City, Province of Quebec, Canada.

1.2.3 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).

1.3 Communications Notifications

The bidder must notify the Contracting Authority at least 7 calendar days in advance of its intention to make public an announcement related to the award of a contract.

1.4 Security Requirement

There is no security requirement associated with this bid solicitation.

1.5 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 Manual (SACC) issued by Public Service and Procurement Canada:

(https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual)

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** (2018-05-22) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.2 SACC Manual Clause

B1000T - Condition of Material, 2014-06-26

2.3 Submission of Bids

Bids must be submitted only to Public Service and Procurement Canada Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

Due to the nature of the bid solicitation, bids transmitted by facsimile will not be accepted.

2.4 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than **seven** (**7) 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 published as an amendment to the bid solicitation.

2.5 Applicable Laws

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

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.

2.6 Mandatory Bidder's Conference

A mandatory bidders' conference will be held in Quebec City (Quebec, Canada) at the CCG's facility located at 101 Champlain Blvd, on Thursday, April 25, 2019. It is mandatory that the Bidder or a representative of the Bidder attend this conference. The scope of the requirement outlined in the bid solicitation will be reviewed and questions will be answered.

Bidders should communicate with the Contracting Authority before the conference to confirm attendance. Bidders shall provide, in writing, to the Contracting Authority, the names of the person(s) who will be attending and a list of issues they wish to table at least **five (5) working days** before the scheduled conference. Bidders will be required to sign an attendance form.

Any clarifications or changes to the bid solicitation resulting from the bidders' conference will be included as an amendment to the bid solicitation.

Bidders who do not attend or send a representative will not be given an alternative appointment and their bids will be rejected as non-compliant.

2.7 Mandatory Site Visit - Vessel

A mandatory visit of a 1200 type ice breaker vessel will be held in Quebec City (Quebec, Canada) at the CCG's facility located at 101 Champlain Blvd, on Thursday, April 25, 2019. It is mandatory that the Bidder or a representative of the Bidder visit the vessel. The scope of the requirement outlined in the bid solicitation will be reviewed and questions will be answered.

Bidders should communicate with the Contracting Authority before the visit to confirm attendance. Bidders shall provide, in writing, to the Contracting Authority, the names of the person(s) who will be attending and a list of issues they wish to table at least **five (5) working days** before the scheduled visit. Bidders will be required to sign an attendance form.

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

Bidders who do not attend or send a representative will not be given an alternative appointment and their bids will be rejected as non-compliant.

2.8 Term of the Contract

The Work must be completed as follows:

Start: Date of contract award.

Installation, certification and approval by Canada: No later than December 3, 2019.

By submitting a bid, the Bidder certifies that they have sufficient material and human resources allocated or available to deliver the Requirement and that the above Work Period is adequate to perform the work required to deliver the Requirement.

2.8.1 Option for additional Engine Governor Control Systems

The Contractor grants to Canada the irrevocable option to provide up to two (2) additional Engine Governor Control Systems, under the same terms and conditions, for the CCGS Des Groseilliers and the CCGS Amundsen. The Contractor agrees that it will be paid in accordance with the applicable provisions as set out in the Basis of Payment.

Canada may exercise these options at any time by sending a written notice to the Contractor at least 30 calendar days before the expiry date of the Contract warranty period. The options may only be exercised by the Contracting Authority, and will be evidenced for administrative purposes only, through a contract amendment.

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 (three (3) hard copies and one (1) soft copy on USB storage;

Section II - Financial Bid (one (1) hard copy and one (1) soft copy on USB storage;

Section III - Certifications (one (1) hard copy and one (1) soft copy on USB storage.

Two (2) packages must be provided with the bid. The first package should include the copies of the Technical Bid (Section I), as well as the copies of the Certifications (Section III). The other package should include the copies of the Financial bid (Section II), as requested above.

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft 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. See the Policy on Green Procurement at *http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html*

3.2 Section I: Technical Proposal

Bidders must submit a Technical Proposal Package for Canada's evaluation. The package must answer to all requests of the SOW, Annex A. In their technical proposal, bidders must demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders must demonstrate their capability in a thorough, concise and clear manner for carrying out the work.

The Technical Proposal must address clearly and in sufficient depth the points that are subject to the Evaluation Procedures and Basis of Selection as per the Part 4 of the RFP. Simply repeating the statement contained in the RFP is not sufficient. In order to facilitate the evaluation of the proposal, Canada requests that bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, bidders may refer to different sections of their proposals by identifying the specific paragraph and page number where the subject topic has already been addressed.

Ensure that the Annex "M" – MANDATORY PROPOSAL DELIVERABLES CHECKLIST - is completed accordingly.

3.3 Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Annex C, Basis of Payment. The total amount of the applicable taxes must be excluded and shown separately.

3.3.1 Cost Breakdown

Bidders must include with their financial bid a complete cost breakdown of its bid price for the Work in accordance with Annex C, Basis of Payment. Once in contract these prices will form part of the contract.

3.3.2 Financial bid evaluation.

1. **The Firm Fixed Prices provided in Annex C, Basis of Payment form, will be used for evaluating the bid.**

   THE EVALUATION PRICE CONSIST OF THE TOTAL PRICE OF THE THREE (3) VESSELS COMBINED TOGETHER. (CONTRACT FOR VESSEL # 1 PLUS THE TWO (2) OPTIONS VESSELS # 2 AND # 3), APPLICABLE TAXES NOT INCLUDED.

2. The information submitted as a mandatory item will be held as confidential business information. The details of this information may be used for contractual evaluation purposes and/or contract administration purposes.

3.3.3 Exchange Rate Fluctuation

C3011T, (2013-11-06), Exchange Rate Fluctuation

3.3.4 Evaluation of Price

SACC Manual Clause A0222T (2014-06-26), Evaluation of Price**.**

Ensure that the Annex "M" – MANDATORY PROPOSAL DELIVERABLES CHECKLIST - is completed accordingly.

3.4 Section III: Certifications

Bidders must submit the certifications required under **Part 5.**

Ensure that the Annex "M" – MANDATORY PROPOSAL DELIVERABLES CHECKLIST - is completed accordingly.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

Proposals will be assessed in accordance with the entire requirement of the Request for Proposal including the technical evaluation criteria and the financial requirement. An evaluation team composed of representatives of Canada will evaluate the bids.

4.1 Basis of Selection - Highest Combined Rating of Technical Merit and Price

4.1.1 To be declared responsive, a bid must:

a) comply with all the requirements of the RFP; and

b) meet all mandatory criteria (deliverables); and

c) obtain the required minimum of 90 points overall for the technical evaluation criteria which are subject to point rating. The rating is performed on a scale of **140** points.

Bids not meeting a, b, and c will be declared non-responsive.

4.1.2 The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 30 % for the technical merit and 70 % for the price.

4.1.3 To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 30 %.

4.1.4 To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 70%.

4.1.5 For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.

4.1.6 Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.

4.1.7 The table below illustrates **an example** where all three bids are responsive and the selection of the contractor is determined by a 30/70 ratio of technical merit and price, respectively. The total available point equal 135 and the lowest evaluated price is $45,000 (45).

Basis of Selection - Highest Combined Rating Technical Merit (30%) and Price (70%)

	Bidder 1	Bidder 2	Bidder 3
Overall Technical Score	115/135	89/135	92/135
Bid Evaluated Price	$55,000.00	$50,000.00	$45,000.00
Technical Merit Score Calculation	115/135 x 30 = 25.56	89/135 x 30 = 19.78	92/135 x 30 = 20.44
Pricing Score Calculation	45 000/55 000 x 70 = 57.27	45 000/50 000 x 70 = 63.00	45 000/45 000 x 70 = 70.00
Combine Rating	82.83	82.78	90.44
Overall rating	**2nd**	**3rd**	**1st**

4.2 Mandatory Technical Criteria

A mandatory requirement is described using the words “shall”, “must”, “will”, “is required” or “is mandatory”.

4.2.1 Completeness and quality of the written proposal

In their technical bid, bidders shall demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders shall demonstrate their capability in a thorough, concise and clear manner for carrying out the work.

The technical bid must address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

4.2.2 Classification Society

The main components of the proposed new speed control system must be approved for marine use by a recognized classification society. Bidders must provide the certificates (“Type Approval”) demonstrating that the system is approved for marine use with its bid.

The list of the classification societies recognized by Transport Canada (TCMS) is available at this web address:

https://www.tc.gc.ca/eng/marinesafety/dvro-fsc-dspi-1781.htm

The costs associated with the certification of the installation of the new governor system will be paid by Canada.

4.2.3 Bidders' experience

The main equipment used in the project must be of recent design, with proven reliability on marine diesel engines over the past 5 years. Bidders must provide proof that they have already installed the same type and model of EGCS they propose in response for this RFP, on an engine of at least 2000 HP, by providing two (2) examples of successfully completed projects within the last five (5) years.

A technical summary of these two (2) projects as well as the vessels names and registration number must also be provided with the bid.

4.2.4 System Check

Bidders must select mass-produced equipment/components readily available from original manufacturers or suppliers already in the Canadian or U.S. maritime market. Experimental or custom-made products are not accepted for this project.

Bidders must certify that all equipment, components and other materials used must be new.

4.2.5 Support Capacity

a) Field Service Representatives (FSR)

Bidders must demonstrate that they have or will have FSRs based in Canada and that qualified technicians will be available to provide on-site support within 48 hours during the warranty period, directly at the Coast Guard base of Quebec City.

b) Equipment Life Cycle

Bidders must demonstrate that the proposed equipment will have a minimum of ten (10) years remaining in its production life and fifteen (15) years remaining in its complete life cycle services.

Definitions :	
« Production life »	Equipment still being manufactured and sold. Full technical services is available
« Complete life cycle services »	Serial production ceased. All spare parts and full services remain available.

c) Spare parts availability

Bidders must demonstrate that spare parts for new equipment are quickly and easily available directly from the original manufacturers or through authorized suppliers in North America.

4.2.6 Document Management Plan

Bidder's proposal must describe the Document Management Plan for drawings and specifications, including the details for Regulatory approvals and Client Feedback.

4.2.7 Preliminary Planning and Scheduling

Bidders must provide with their proposals a planning and scheduling GANTT chart that will allow a preliminary evaluation of the different periods of time required for completion of the work. This chart must include at least the following:

- Contract award (Day 1);
- Site visit to assess the configuration of the existing system (CCGS Pierre Radisson);
- Production and submission of all drawings and other design documents (Design Review Package - DRP). Must be submitted at the latest 12 weeks after contract award;
- Review by Canada of the Design Review Package (2 Weeks);
- Approval by Classification Society and/or TCMS (8 Weeks);
- Purchase of all the components to be installed;
- Purchase of all the spare parts;
- Current system removal. New equipment installation and wiring timelines requirement (between October 14 and November 26, 2019);
- Dock and sea trials. Final approval of the new system (Between November 26 and December 3, 2019);
- Onboard training of the CCG personnel:

  Crew A (2 Days): Between Nov 6 and Dec 1st, 2019

  Crew B (2 Days): Between Oct 28 and Nov 3 OR between Dec 4 and Dec 6, 2019
- Final update of the drawings and documentation.

4.2.8 Quality Management System

Bidders must provide with their proposals objective evidence that they have in place a Quality Management System registered to ISO 9001:2008 or a Quality Management System modeled on ISO 9001:2008 which will include:

a) if registered, its valid ISO 9001:2008 certification, and;

b) an example of its Quality Control Plan (QCP) as applied on previous projects of the same nature and complexity of this RFP, and;

c) a sample of an Inspection and Test Plan (ITP) developed in accordance with the QCP in (b) above.

4.2.9 Integration with the existing propulsion control system

Bidders must provide evidence that the proposed EGCS is compatible with the existing propulsion control system recently installed by ABB Canada. Any integration costs required to adapt the bidder proposed EGCS to the existing PCS shall be at the bidder's expense and included in the bid.

4.2.10 Preliminary Design Package (PDP)

Bidders must submit with their proposal a preliminary design package (PDP) to allow CCG to evaluate the proposed system.

This package must contain at least the following information:

a) List of all new main equipment to be used (actuator and control modules);

c) Detailed technical manuals of the main equipment to be used;

d) Block diagram of the system, as it will be installed on board the ship;

4.3 Point Rated Technical Criteria

4.3.1 Corporate history

	Bidders' proven experience in the design and installation of EGCS for ships:	**Max 50**
A	1 to 5 years experience	**10 pts**
B	6 to 10 years experience	**20 pts**
C	11 to 15 years experience	**30 pts**
D	16 to 20 years experience	**40 pts**
E	20 + years experience	**50 pts**

4.3.2 Experience in similar EGCS projects

Number of similar projects carried out by the bidder over the past 10 years. To be valid, each of the projects mentioned below shall be for the design and installation on marine engines with 2000 hp or more. Bidders must provide information on the date and the place of installation of these systems, and an overview of the work accomplished.

	Number of similar EGCS projects carried out by the bidder over the past 10 years:	**Max 30**
A	Design and installation on 3 to 5 projects	**10 pts**
B	Design and installation on 6 to 10 projects	**20 pts**
C	Design and installation on 11 or more projects	**30 pts**

4.3.3 Personnel in charge of technical design of the proposed system.

Note: Bidders must provide a resume of the person who will be in charge of the technical part of the design work. This person shall be working for the bidder on a full time basis during the entire contract period.

	Experience of the person in charge of the design of the proposed system:	**Max 30**
A	Graduate Engineer with 5 years or more experience in the design of EGCS in the marine field.	**10 pts**
B	Graduate Engineer with 10 years or more experience in the design of EGCS in the marine field.	**20 pts**
C	Graduate Engineer with 15 years or more experience in the design of EGCS in the marine field.	**30 pts**

4.3.4 Personnel in charge of the installation

Note: Bidders must provide a resume of the person who will be responsible for coordinating the installation work. This person shall be working for the bidder on a full time basis during the entire contract period.

	Experience of the person in charge of coordinating the installation work:	**Max 30**
A	Professional with 5 years or more experience in the installation of EGCS in the maritime field.	**10 pts**
B	Professional with 10 years or more experience in the installation of EGCS in the maritime field.	**20 pts**
C	Professional with 15 years or more experience in the installation of EGCS in the maritime field.	**30 pts**

TOTAL POINTS : 140

MINIMUM REQUIRED : 90 / 140

The Point Rated Criteria must be submitted as part of the Proposal Deliverables. Ensure that the Annex "M" is completed accordingly.

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and documentation before contract award.

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, if any certification made by the Bidder is found to be untrue whether 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 with this request will also render the bid non-responsive or will constitute a default under the Contract.

5.1 Mandatory Certifications Required with the Proposal

The Bidder must submit the following duly completed mandatory certifications as part of its bid.

5.1.1 Code of Conduct and Certifications - Related documentation

By submitting a bid, the Bidder certifies that the Bidder and its affiliates are in compliance with the provisions as stated in Section 01 Code of Conduct and Certifications - Bid of Standard Instructions 2003. The related documentation therein required will assist Canada in confirming that the certifications are true.

Pursuant to section 01 of Standard Instructions 2003, Bidders who are incorporated, including those bidding as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Bidder. Bidders bidding as sole proprietorship, including those bidding as a joint venture, must provide the name of the owner.

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 available from Human Resources and Skills Development Canada (HRSDC) - Labour's website : http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml

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.

5.1.3 Education and Experience

By submission of a bid, the Bidder certifies that all the information provided in the résumés and supporting material submitted with its bid, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Bidder to be true and accurate. Furthermore, the Bidder warrants that every individual proposed by the Bidder for the requirement is capable of performing the Work described in the resulting contract.

5.1.4 Status and Availability of Resources

By submission of a bid, the Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's representatives and at the time specified in the bid solicitation or agreed to with Canada's representatives. If for reasons beyond its control, the Bidder is unable to provide the services of an individual named in its bid, the Bidder may propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder and of his/her availability.

5.1.5 Former Public Servant

Contracts awarded to Former Public Servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPS, bidders must provide the information required below with its proposal. Failure to provide the required information will render the proposal non-responsive.

5.1.5.1 Definitions

For the purposes of this clause,*"former public servant"* *is any former member of a department as defined in the Financial Administration Act*, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

(a) an individual;

(b) an individual who has incorporated;

(c) a partnership made of former public servants; or

(d) a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the Public Service Superannuation Act (PSSA), R.S., 1985, c.P-36, and any increases paid pursuant to the *Supplementary Retirement Benefits Act*, R.S., 1985, c.S-24 as it affects the PSSA. It does not include pensions payable pursuant to the *Canadian Forces Superannuation Act*, R.S., 1985, c.C-17, the *Defence Services Pension Continuation Act*, 1970, c.D-3, the *Royal Canadian Mounted Police Pension Continuation Act* , 1970, c.R-10, and the *Royal Canadian Mounted Police Superannuation Act*, R.S., 1985, c.R-11, the *Members of Parliament Retiring Allowances Act* , R.S., 1985, c.M-5, and that portion of pension payable to the *Canada Pension Plan Act*, R.S., 1985, c.C-8.

5.1.5.2 Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? **Yes ( ) No ( )**

If so, the Bidder must provide the following information, for all FPS in receipt of a pension, as applicable:

(a) name of former public servant;

(b) date of termination of employment or retirement from the Public Service.

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with **Contracting Policy Notice: 2012-2** and the Guidelines on the Proactive Disclosure of Contracts.

5.1.5.3 Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **Yes ( ) No ( )**

If so, the Bidder must provide the following information:

(a) name of former public servant;

(b) conditions of the lump sum payment incentive;

(c) date of termination of employment;

(d) amount of lump sum payment;

(e) rate of pay on which lump sum payment is based;

(f) period of lump sum payment including start date, end date and number of weeks;

(g) number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may

be paid to a FPS who received a lump sum payment is $5,000, including Applicable Taxes.

PART 6 - FINANCIAL AND OTHER REQUIREMENTS

6.1 Financial Capability

A9033T, 2012-07-16, Financial Capability

6.2 Contract Financial Security

E5000C, 2010-01-11, Performance bonds

6.2.1 If this bid is accepted, the Bidder shall be required to provide the performance bond form PWGSC-TPSGC 505 in accordance with 7.13 before contract award.

6.2.2. If, for any reason, Canada does not receive, within 15 calendar days of notice to the bidder, the required Contract Financial Security, Canada may accept another offer, seek new bids, negotiate a contract or not accept any bids, as Canada may deem advisable.

6.3 Insurance Requirements

The Bidder must provide, with the bid, a letter from an insurance broker or an insurance company licensed to operate in Canada stating that the Bidder, if awarded a contract as a result of this RFP process, can be insured in accordance with the Insurance Requirements specified in Annex E.

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

7.1.1 To deliver and install a new Engine Governor Control System (EGCS) that will meet or exceed the requirements contained in Annex A - Statement of Work (SOW),

7.1.2 T**o** carry out, within the Work Period of the Contract, all unscheduled work authorized by the Contracting Authority as per Annex G, Procedure For Processing Unscheduled Work.

7.1.3 Work location: Quebec City, Province of Quebec, Canada.

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: https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual

7.2.1 General Conditions

2030 **(2018-06-21),** General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

2030 **(2018-06-21),** General Conditions - Higher Complexity - Goods, are hereby amended as follows;

Section 22 Warranty

DELETE:

1- Despite inspection and acceptance of the Work by or on behalf of Canada and without restricting any other provision of the Contract or any condition, warranty or provision imposed by law, the Contractor warrants that, for twelve (12) months, the Work will be free from all defects in design, material or workmanship, and will conform to the requirements of the Contract. The warranty period begins on the date of acceptance of the Work by the Technical Authority. With respect to Government Property not supplied by the Contractor, the Contractor's warranty will extend only to its proper incorporation into the Work.

2- In the event of a defect or non-conformance in any part of the Work during the warranty period, the Contractor, at the request of Canada to do so, must as soon as possible repair, replace or otherwise make good at its own option and expense the part of the Work found to be defective or not in conformance with the requirements of the Contract.

3- The Work or any part of the Work found to be defective or non-conforming will be returned to the Contractor's plant for replacement, repair or making good. However, when in the opinion of Canada it is not expedient to remove the Work from its location, the Contractor must carry out any necessary repair or making good of the Work at that location at its own expense.

4- Canada must pay the transportation cost associated with returning the Work or any part of the Work to the Contractor's plant pursuant to subsection 3. The Contractor must pay the transportation cost associated with forwarding the replacement or returning the Work or part of the Work when rectified to the delivery point specified in the Contract or to another location directed by Canada.

5- The Contractor must remedy all data and reports pertaining to any correction or replacement under this section, including revisions and updating of all affected data, manuals, publications, software and drawings called for under the Contract, at no cost to Canada.

6- If the Contractor fails to fulfill any obligation described in this section within a reasonable time of receiving a notice, Canada will have the right to remedy or to have remedied the defective or non-conforming work at the Contractor's expense. If Canada does not wish to correct or replace the defective or non-conforming work, an equitable reduction will be made in the Contract Price.

7- The warranty period is automatically extended by the duration of any period or periods where the Work is unavailable for use or cannot be used because of a defect or non-conformance during the original warranty period. The warranty applies to any part of the Work repaired, replaced or otherwise made good pursuant to subsection 2, for the greater of:

A. the warranty period remaining, including the extension, or

B. ninety (90) days or such other period as may be specified for that purpose by agreement between the Parties.

INSERT:

1. Despite inspection and acceptance of the Work by or on behalf of Canada and without restricting any other provision of the Contract or any condition, warranty or provision imposed by law, the Contractor warrants that, for 15 months the Work will be free from all defects in design, material or workmanship, and will conform to the requirements of the Contract. The warranty period begins on the date of acceptance by the Technical Authority. With respect to Government Property not supplied by the Contractor, the Contractor's warranty will extend only to its proper incorporation into the Work.

2. In the event of a defect or non-conformance in any part of the Work during the warranty period, the Contractor, at the request of Canada to do so, must as soon as possible repair, replace or otherwise make good at its own option and expense the part of the Work found to be defective or not in conformance with the requirements of the Contract.

3. The Work or any part of the Work found to be defective or non-conforming will be returned to the Contractor's plant for replacement, repair or making good. However, when in the opinion of Canada it is not expedient to remove the Work from its location, the Contractor must carry out any necessary repair or making good of the Work at that location.

4. Canada must pay the transportation cost associated with returning the Work or any part of the Work to the Contractor's plant pursuant to subsection 3. The Contractor must pay the transportation cost associated with forwarding the replacement or returning the Work or part of the Work when rectified to the delivery point specified in the Contract or to another location directed by Canada.

5. The Contractor must remedy all data and reports pertaining to any correction or replacement under this section, including revisions and updating of all affected data, manuals, publications, software and drawings called for under the Contract, at no cost to Canada.

6. If the Contractor fails to fulfill any obligation described in this section within a reasonable time of receiving a notice, Canada will have the right to remedy or to have remedied the defective or non-conforming work at the Contractor's expense. If Canada does not wish to correct or replace the defective or non-conforming work, an equitable reduction will be made in the Contract Price.

7. The warranty period is automatically extended by the duration of any period or periods where the Work is unavailable for use or cannot be used because of a defect or non-conformance during the original warranty period. The warranty applies to any part of the Work repaired, replaced or otherwise made good pursuant to subsection 2, for the greater of the warranty period remaining, including the extension.

Performance Period (Warranty)

Following vessel's commissioning and final acceptation of the new EGCS, the contractor shall enter into a fifteen (15) months performance period. During this period, the contractor shall be responsible for the continued functionality, performance, and additional tuning of the new system upgrades such that the systems meet the functional requirements stated within this statement of work. During this period, the contractor shall also be responsible to replace all defective parts, in addition to perform all work and additional equipment purchases that may be required to correct certain anomalies in the original design of the new EGCS.

In addition to providing assistance, the contractor shall be available to travel to the vessel within 48 hours' notice from the Technical Authority during this period. The contractor shall be responsible for its travel costs to the vessel's home port (Quebec City), and the Coast Guard will cover any follow-on travel costs to reach the vessel if required.

7.2.2 Supplemental General Conditions

1029 (2018-12-06), Ship Repairs, apply to and form part of the Contract

7.3 Security Requirement

There is no security requirement applicable to this Contract.

7.4 Term of Contract

7.4.1 Work Period

1. The Work must be completed as follows:

   Start: Date of contract award.

   Installation, certification and approval by Canada: No later than December 3, 2019.

2. The Contractor certifies that he has sufficient materiel and human resources allocated or available to deliver the Requirement and that the above work period provides an adequate period to perform the work required to deliver the Requirement.

7.4.2 Option for additional EGCS

The Contractor grants to Canada the irrevocable option to provide up to (2) additional EGCS under the same conditions. The Contractor agrees that it will be paid in accordance with the applicable provisions as set out in the Basis of Payment.

Canada may exercise these options at any time by sending a written notice to the Contractor at least 30 calendar days before the expiry date of the warranty period of the Contract. The options may only be exercised by the Contracting Authority, and will be evidenced for administrative purposes only, through a contract amendment.

7.5 Deliverables

All deliverables must be delivered as requested in the SOW and the Contract.

7.6 Authorities

7.6.1 Contracting Authority

The Contracting Authority for the contract is:

Rejean Giguere
Department of Public Works and Government Services Canada (PSPC) acquisition Sector,
800, rue de La Gauchetière Ouest,
Montreal, Quebec, H5A 1L6
Email: rejean.giguere@tpsgc-pwgsc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not

perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

7.6.2 Technical Authority

The Technical Authority for the Contract is: *(information will be provided at contract award)*

Electrical Projects Officer (VLE Program)
Canadian Coast Guard (Fisheries & Oceans Canada)
101 Champlain blvd.
Quebec City, Quebec, G1K 7Y7
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.

7.6.3 Inspection Authority – Same as Technical Authority

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.

7.6.4 Contractor's Representative *(information will be provided at contract award)*

Name:

Title:

Company:

Address:

Telephone:

E-mail:

7.7 Payment

7.7.1 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 in accordance with the Basis of Payment in Annex C (Appendix 1).

7.7.2 Limitation of Price

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

7.7.3 Method of Payment - Milestone Payment

If applicable, Canada will make milestone payments not more frequently than once a month in accordance with the Schedule of Milestones for Payment, Appendix 1 to Annex C, if:

(a) an accurate and complete claim for payment using PWGSC-TPSGC 1111, 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) all the certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives;

(c) all work associated with the milestone and as applicable any deliverable required has been completed and accepted by Canada.

7.7.4 SACC Manual Clauses

H4500C - Lien - Section 427 of the Bank Act, 2010-01-11

C2000C - Taxes - Foreign-based Contractor, 2007-11-30

C0711C - Time Verification, 2008-05-12

7.8 Invoicing Instructions

1. The Contractor must submit a claim for payment using form PWGSC-TPSGC 1111, 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;

   (c) the description and value of the milestone claimed as detailed in the Contract;

   (d) quality assurance documentation when applicable and/or as requested by the Contracting Authority.

2. The Goods and Services Tax or Harmonized Sales Tax (GST/HST), as applicable, must be calculated on the total amount of the claim.

3. The Contractor must prepare and certify one original and one (1) copy of the claim on form PWGSC-TPSGC 1111, and forward it to the Contracting and Technical Autority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

4. The Contracting Authority will then forward the original of the claim to the Technical Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.

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

7.9 Certifications

7.9.1 Compliance

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

7.10 Applicable Laws

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

7.11 Priority of Documents

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

(a) The Articles of Agreement;
(b) The General Conditions 2030, (2016-04-04), Higher Complexity - Goods;
(c) The Supplemental General Conditions 1029, (2010-08-16), Ship Repairs;
(d) Annex A, Statement of Work (SOW);
(e) Annex C, Basis of payment;
(f) Appendix 1 to Annex C, Schedule of Milestones for Payment;
(g) Other Annexes;
(h) The Contractor's Proposal dated_____.

7.12 Insurance Requirements

The Contractor must comply with the insurance requirements specified in Annex E. 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 fulfill 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, prior to contract award, 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. If, for any reason, Canada does not receive, within 15 calendar days of notice to the bidder, the required Contract insurance certificate, Canada may accept another offer, seek new bids, negotiate a contract or not accept any bids, as Canada may deem advisable.

7.13 Financial Security

7.13.1 Term of Financial Security

Any bond, bill of exchange, letter of credit or other security provided by the Contractor to Canada in accordance with the terms of the Contract must not expire before 90 days after the end of the Warranty Period indicated in the Contract.

The Contracting Authority may, at its sole discretion, require an extension to the period of the security, for which the Contractor may apply for financial compensation.

The Contracting Authority may, at its sole discretion, return the security to the Contractor before the expiration, provided however that no risk will accrue to Canada as a result of this.

7.13.2 Contract Financial Security

7.13.2.1 The Contractor must provide the Contracting Authority with financial security prior to contract award. The financial security must be in the form of a security deposit as defined in clause 6.2 in the amount of **twenty (20) percent** of the Contract, applicable taxes and options not included.

7.13.2.2 If, for any reason, Canada does not receive, within 15 calendar days of notice to the bidder, the required Contract Financial Security, Canada may accept another offer, seek new bids, negotiate a contract or not accept any bids, as Canada may deem advisable.

7.13.2.3 If the security deposit is in the form of government guaranteed bonds with coupons, all coupons that are unmatured at the time the security deposit is provided must be attached to the bonds. The Contractor must provide written instructions concerning the action to be taken with respect to coupons that will mature while the bonds are pledged as security, when such coupons are in excess of the security deposit requirement.

7.13.2.4 If the security deposit is in the form of a bill of exchange, Canada will deposit the bill of exchange in an open account in the Consolidated Revenue Fund. Bills of exchange that are deposited to the credit of the Consolidated Revenue Fund will bear simple interest, calculated on the basis of the rates which are in effect during the period the deposit is held.

These rates are published monthly by the Department of Finance and are set to be equal to the average yield on 90-day Treasury Bills, less 1/8 of 1 percent. Interest will be paid annually or, when the security deposit is returned to the Contractor, if earlier. The Contractor may, however, request Canada to hold and not cash the bill of exchange, in which case no interest will become payable.

7.13.2.5 Canada may convert the security deposit to the use of Canada if any circumstance exists which would entitle Canada to terminate the Contract for default, but any such conversion will not constitute termination of the Contract.

7.13.2.6 When Canada so converts the security deposit:

a. the proceeds will be used by Canada to complete the Work according to the conditions of the Contract, to the nearest extent that it is feasible to do so and any balance left will be returned to the Contractor on completion of the warranty period; and

b. if Canada enters into a contract to have the Work completed, the Contractor will:

i. be considered to have irrevocably abandoned the Work; and

ii. remain liable for the excess cost of completing the Work if the amount of the security deposit is not sufficient for such purpose. "Excess cost" means any amount over and above the amount of the Contract Price remaining unpaid together with the amount of the security deposit.

7.13.2.7 If Canada does not convert the security deposit to the use of Canada before completion of the entire contract period, including any extension and warranty period, Canada will return the security deposit to the Contractor within a reasonable time after such date.

7.13.2.8 If Canada converts the security deposit for reasons other than bankruptcy, the financial security must be re-established to the level of the amount stated above so that this amount is continued and available until completion of the entire contract period, including any extension and warranty period.

7.13.2.9 Security Deposit Definition

1. In this Article,"security deposit" means

a. a bill of exchange that is payable to the Receiver General for Canada and certified by an approved financial institution or drawn by an approved financial institution on itself; or

b. a government guaranteed bond; or

c. an irrevocable standby letter of credit, or

d. such other security as may be considered appropriate by the Contracting Authority and approved by Treasury Board;

2. "approved financial institution" means

    a. any corporation or institution that is a member of the Canadian Payments Association;

    b. a corporation that accepts deposits that are insured by the Canada Deposit Insurance Corporation or the Régie de l'assurance-dépôts du Québec to the maximum permitted by law;
    c. a credit union as defined in paragraph 137(6) of the Income Tax Act;

    d. a corporation that accepts deposits from the public, if repayment of the deposits is guaranteed by a Canadian province or territory; or

    e. the Canada Post Corporation.

3. "government guaranteed bond" means a bond of the Government of Canada or a bond unconditionally guaranteed as to principal and interest by the Government of Canada that is:

    a. payable to bearer;

    b. accompanied by a duly executed instrument of transfer of the bond to the Receiver General for Canada in accordance with the Domestic Bonds of Canada Regulations;

    c. registered in the name of the Receiver General for Canada.

4. "irrevocable standby letter of credit"

    a. means any arrangement, however named or described, whereby a financial institution (the "Issuer"), acting at the request and on the instructions of a customer (the "Applicant"), or on its behalf,

        i. will make a payment to or to the order of Canada, as the beneficiary;

        ii. will accept and pay bills of exchange drawn by Canada;

        iii. authorizes another financial institution to effect such payment, or accept and pay such bills of exchange; or

        iv. authorizes another financial institution to negotiate, against written demand(s) for payment, provided that the conditions of the letter of credit are complied with.

    b. must state the face amount which may be drawn against it;

    c. must state its expiry date;

d. must provide for sight payment to the Receiver General for Canada by way of the financial institution's draft against presentation of a written demand for payment signed by the authorized departmental representative identified in the letter of credit by hisher office;

e. must provide that more than one written demand for payment may be presented subject to the sum of those demands not exceeding the face amount of the letter of credit;

f. must provide that it is subject to the International Chamber of Commerce (ICC) Uniform Customs and Practice (UCP) for Documentary Credits, 2007 Revision, ICC Publication No. 600. Pursuant to the ICC UCP, a credit is irrevocable even if there is no indication to that effect; and

g. must be issued (Issuer) or confirmed (Confirmer), in either official language, by a financial institution that is a member of the Canadian Payments Association and is on the letterhead of the Issuer or Confirmer. The format is left to the discretion of the Issuer or Confirmer.

7.14 Limitation of Contractor's Liability for Damages to Canada

7.14.1 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.

7.14.2 Whether the claim is based in contract, tort (including negligence), 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:

a) any infringement of intellectual property rights;

b) any breach of warranty obligations; or

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

7.14.3 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.

7.14.4 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 (7.14.2), 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.

7.14.5 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 7.14.2(a), (b), and (c) 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, but 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.

7.14.6 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 7.14.5, above.

7.14.7 In the event of a termination under this Article, the Contract will automatically remain in force subject to all of the same terms and conditions until the date of termination and the Contractor agrees that it will be paid in accordance with the applicable provisions as set out in the Basis of Payment, Annex B and that the Contractor's liability remains as specified in subarticles (7.14.1) through (7.14.4), above.

7.14.8 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.

7.15 Project Schedule

The project schedule must be delivered in accordance with Annex A, SOW.

The Contractor must revised the project schedule on an as required basis and submit to Canada for review and concurrence every month. If the revision is due to authorized unscheduled work, the revision must include the unscheduled work, all related schedule impact on the work and impact to the delivery date of the requirement should it be the case.

7.16 Post Contract Award Meeting

A Post Contract Award Meeting will be convened and chaired by the Contracting Authority at the Contractor's facility at a time to be determined. At the meeting the Contractor will introduce the

project management personnel supported by an organization chart, and Canada will introduce the Authorities of the Contract. A review of the term and conditions of the Contract will be conducted by the Contracting Authority.

The Contractor's costs of holding a Post Contract Award Meeting must be included in the price of the bid. Travel and living expenses for Government Personnel will be arranged and paid for by the Canada.

7.17 Progress Report

1. The Contractor must submit monthly reports on the progress of the Work in an electronic format to the Technical Authority and to the Contracting Authority.

2. The progress report must contain two (2) Parts:

   (a) PART 1: The Contractor must answer the following three questions:

      i. is the project schedule being impacted and if impacted why ?
      ii. is the project delivery date being impacted and if impacted why ?
      iii. is the project within budget ?
      iv. is the project free of any areas of concern in which the assistance or guidance of Canada may be required ?

   (b) PART 2: A narrative report, brief, yet sufficiently detailed to enable the Technical Authority to evaluate the progress of the Work, containing as a minimum:

      a description of the progress of each task and of the Work as a whole during the period of the report. Sufficient sketches, diagrams, photographs, etc., must be included, if necessary, to describe the progress accomplished.

7.18 Subcontractor(s)

The Contracting Authority shall be notified, in writing, of any subcontractors the contractor may require to perform the Work as well as any changes that may occur during the period of the contract. When the Contractor subcontracts work, a copy of the subcontract purchase order is to be passed to the Contracting Authority. In addition, the Contractor must monitor progress of subcontracted work and inform the Inspection Authority on pertinent stages of work to permit inspection when considered necessary by the Inspection Authority.

7.19 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.

7.20 SACC Manual Clauses

B9035C - Progress Meetings, 2008-05-12
B5007C - Procedures for Design Change or Additional Work, 2010-01-11
D3015C - Dangerous Goods/Hazardous Products, 2014-09-25
A0285C - Workers Compensation, 2007-05-25

7.21 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.

7.22 Welding Certification

1. The Contractor must ensure that welding is performed by a welder certified by the Canadian Welding Bureau (CWB) in accordance with the requirements of the following Canadian Standards Association (CSA) standards:

   CSA W47.1-09 (R2014) Certification for Companies for Fusion Welding of Steel
   (Minimum Division Level 2.1)

2. In addition, welding must be done in accordance with the requirements of the applicable drawings and specifications.

3. Before the commencement of any fabrication work, and upon request from the Technical Authority, the Contractor must provide approved welding procedures and/or a list of welding personnel intended to be used in the completion of the work. The list must identify the CWB welding procedure qualifications attained by each of the personnel listed and must be accompanied by a copy of each person's current CWB welding certification.

7.23 Permits, Licenses and Certificates

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.

7.24 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.

7.25 Dispute Resolution

The parties agree to follow the procedures below for the settlement of any disputes which may arise throughout the life of this Contract prior to seeking redress through court procedures:

(a) Disputes arising from this Contract will in the first instance be resolved by the Contracting Authority and the Contractor's Contract Administrator within 15 working days or such additional time as may be agreed to by both parties.

(b) Failing resolution under (a) above, the Manager of the Montreal Procurement Division at PSPC and the Contractor's Representative Supervisor will attempt to resolve the dispute within an additional fifteen (15) working days.

(c) Failing resolution under (a) or (b) above, the Director of the Montreal Procurement Division at PSPC, and the Contractor's Senior Management will attempt to resolve the dispute within an additional thirty (30) working days.

(d) Notwithstanding the above procedure, either party may seek a decision through the courts at any time during the dispute.

7.26 Discretionary Audit

The Contractor's certification that the price or rate is not in excess of the lowest price or rate charged anyone else, including the Contractor's most favored customer, for the like quality and quantity of the goods, services or both, is subject to verification by government audit, at the discretion of Canada, before or after payment is made to the Contractor.

If the audit demonstrates that the certification is in error after payment is made to the Contractor, the Contractor must, at the discretion of Canada, make repayment to Canada in the amount found to be in excess of the lowest price or rate or authorize the retention by Canada of that amount by way of deduction from any sum of money that may be due or payable to the Contractor pursuant to the Contract.

If the audit demonstrates that the certification is in error before payment is made, the Contractor agrees that any pending invoice will be adjusted by Canada in accordance with the results of the audit. It is further agreed that if the Contract is still in effect at the time of the verification, the price or rate will be lowered in accordance with the results of the audit.

7.27 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.

ANNEX A – STATEMENT OF WORK

AS PER ATTACHED DOCUMENT.

ANNEX C - BASIS OF PAYMENT - FIRM PRICE

Annex C will form the Basis of Payment for the resulting Contract and must be filled in at the bid submission stage.

C1 Contract Firm Price, applicable taxes not included: For the delivery and installation of a system during the fall 2019 period:

For the execution of work set out in Annex A (SOW):

CONTRACT - SHIP # 1 - CCGS Pierre Radisson	**Amount**
TOTAL :	**$**

C2 Option Firm Price, applicable taxes not included: For the delivery and installation of a system in 2020:

For the execution of work set out in Annex A (SOW):

OPTION - SHIP # 2	**Amount**
TOTAL :	**$**

C3 Option Firm Price, applicable taxes not included: For the delivery and installation of a system in 2021:

For the execution of work set out in Annex A (SOW):

OPTION - SHIP # 3	**Amount**
TOTAL :	**$**

C4 Price for unscheduled work during the contract period:

The Contractor will be paid for unscheduled work on an as and when required basis, as authorized by Canada and as per Annex G, Procedure for Processing Unscheduled Work:

a)	For Engineering work: Firm hourly rate, applicable taxes not included.	**$**_____
b)	For Other Related work: Firm hourly rate, applicable taxes not included.	**$**_____
c)	For welding work: Firm hourly rate, applicable taxes not included.	**$**_____

Prorated Prices for 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 prorating the quoted Work costs in the Contract when in similar areas of the vessel.

Overtime

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.

APPENDIX 1 TO ANNEX C – SCHEDULE OF MILESTONES FOR PAYMENT

#	DELIVERABLES:	% to be paid of the total contract amount, taxes not included
P1	**Survey and Design Review Package (DRP) completed :** • Update of the project implementation schedule; • Assessment of the current engines' speed control system and drawings; • Complete physical layout of the new equipment/components as they will be installed on the ship; • Details on wiring/connecting of new systems and their integration with existing equipment; • All schematic drawings and diagrams (electrical and mechanical); • Details on programming and initial adjustment of parameters; • Details on the method used to adjust and evaluate the performance of the new speed control units during dockside and sea trials; • Review and approval by Canada; • Review and approval of the Classification Society and/or Transport Canada (TCMS);	**10 %**
P2	**Purchase / preparation of equipments completed :** • Purchase of all required equipments and components; • Delivery of all factory test reports performed on the main equipment;	**40%**
P3	**Installation work, training and final documentation completed :** • Removal of equipment, cabling and pipes that are no longer useful; • Passage of the new cables; • Installation and connection of all equipments; • Adjustment, programming and calibration of all equipments; • Operation of the equipments and individual protections checked; • Dock and sea trials. Fine tuning of the entire system and bugs fix; • Approval by Canada; • Approval by a Classification Society and/or Transport Canada (TCMS); • Production of a report on the adjustment/performance of the system; • Delivery of the final version of the drawings; • Delivery of all technical manuals; • Delivery of all the spare parts; • Training of the CCG personnel.	**40 %**
P4	**Final payment at the end of the guarantee period**	**10%**

ANNEX E - INSURANCE REQUIREMENTS

E1 Ship Repairers' Liability Insurance

1. The Contractor must obtain Ship Repairer's Liability Insurance and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than $10,000,000 per accident or occurrence and not less than $20,000,000 in the annual aggregate.

2. The Ship Repairer's Liability insurance must include the following:

   a. Additional Insureds: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.

   b. Waiver of Subrogation Rights: Contractor's Insurer to waive all rights of subrogation against Canada as represented by Environment Canada and Public Works and Government Services Canada for any and all loss of or damage to the vessel, however caused.

   c. Notice of Cancellation: The Insurer will endeavor to provide the Contracting Authority thirty (30) days written notice of cancellation.

   d. Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.

   e. Cross Liability/Separation of Insured: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

E2 Commercial General Liability Insurance

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than $10,000,000 per accident or occurrence and not less than $20,000,000 in the annual aggregate.

2. The Commercial General Liability Insurance policy must include the following:

   (a) Additional Insureds: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Service and Procurement Canada.

   (b) Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.

(c) Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.

(d) Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.

(e) Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

(f) Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.

(g) Employees and, if applicable, Volunteers must be included as Additional Insured.

(h) Employers' Liability (or confirmation that all employees are covered by Worker's compensation (WSIB) or similar program)

(i) Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.

(j) Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.

(k) If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.

(l) Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.

(m) Non-Owned Automobile Liability - Coverage for suits against the Contractor resulting from the use of hired or non-owned vehicles.

(n) Advertising Injury: While not limited to, the endorsement must include coverage piracy or misappropriation of ideas, or infringement of copyright, trademark, title or slogan.

(o) All Risks Tenants Legal Liability - to protect the Contractor for liabilities arising out of its occupancy of leased premises.

(p) Amendment to the Watercraft Exclusion to extend to incidental repair operations on board watercraft.

(q) Sudden and Accidental Pollution Liability (minimum 120 hours): To protect the Contractor for liabilities arising from damages caused by accidental pollution incidents.

(r) Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:

Director Business Law Directorate,
Quebec Regional Office (Ottawa),
Department of Justice,
284 Wellington Street, Room SAT-6042,
Ottawa, Ontario, K1A 0H8

For other provinces and territories, send to:

Senior General Counsel,
Civil Litigation Section, Department of Justice
234 Wellington Street, East Tower
Ottawa, Ontario K1A 0H8

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then

Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

E3 Errors and Omissions Liability Insurance

The Contractor must obtain Errors and Omissions Liability (a.k.a. Professional Liability) insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature but for not less than $1,000,000 per loss and in the annual aggregate, inclusive of defence costs.

If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.

The following endorsement must be included:

Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of cancellation.

ANNEX G - 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 and Particulars

   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 Proposal.

   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-TPSGC 1379 (10/2011) 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, estimates of any related 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 cancelling 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 K - FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY – BID 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 such request by Canada will also render the bid non-responsive or will constitute a default under the Contract.

For further information on the Federal Contractors Program for Employment Equity, visit HRSDC-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 HRSDC-Labour.

OR

( ) A5.2. The Bidder certifies having submitted the Agreement to Implement Employment Equity (LAB1168) to HRSDC-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 HRSDC-Labour.

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 L - DIRECTORS/OWNERS OF THE BIDDER (Code of Conduct)

NAME	TITLE

ANNEX M – MANDATORY PROPOSAL DELIVERABLES CHECKLIST

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 proposal to be deemed responsive are summarized below.

The Bidder must submit a completed Annex "M" 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	Location in the bid
1	Request for Proposal document, page 1, completed and signed		
2	Annex C, Basis of Payment		
3	Points Rated Technical Criteria, article 4.3		
4	Mandatory Technical Criteria, article 4.2		
5	Annex L, Directors/Owners of the Bidders (code of conduct), article 5.1.1		
6	Annex K, Federal Contractors Program for Employment Equity – article 5.1.2		
7	Annex N - Former Public Servant in Receipt of a Pension, article 5.1.5.2		
8	Annex O, Work Force Adjustment Directive, article 5.1.5.3		
9	Letter stating that the Bidder can be insured, article 6.3		
10	Statement for ISO 9001-2008, Article 4.2.10		

ANNEX N – FORMER PUBLIC SERVANT (FPS) IN RECEIPT OF A PENSION

5.1.5.2 Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? **Yes ( ) No ( )**

If so, the Bidder must provide the following information, for all FPS in receipt of a pension, as applicable:

(a) name of former public servant;

(b) date of termination of employment or retirement from the Public Service.

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with **Contracting Policy Notice:**

2012-2 and the Guidelines on the Proactive Disclosure of Contracts.

https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/A/A3025C/2

ANNEX O – WORK FORCE ADJUSTMENT DIRECTIVE

5.1.5.3 Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **Yes ( ) No ( )**

If so, the Bidder must provide the following information:

(a) name of former public servant;

(b) conditions of the lump sum payment incentive;

(c) date of termination of Employment;

(d) amount of lump sum payment;

(e) rate of pay on which lump sum payment is based;

(f) period of lump sum payment including start date, end date and number of weeks;

(g) number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is $5,000, including Applicable Taxes.

Modernization of Speed Controllers for Diesel Propulsion Engines

Type 1200 Icebreakers

Annex "A"
Statement of Work (SOW)

Fisheries and Oceans Canada / Canadian Coast Guard
Integrated Technical Services / Naval Engineering

101 Champlain Blvd.
Quebec City, Quebec
G1K 7Y7

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1.0 Modernization of Speed Controllers for Diesel Propulsion Engines (Overview)

1.1 Objective

1.1.1 The purpose of this document is to establish the technical requirements for a project to modernize the speed control systems installed on six propulsion diesel engines of the CCGS *Pierre Radisson.* This vessel is based in Quebec City and belongs to the icebreaking fleet of the Canadian Coast Guard (CCG), a division of Fisheries and Oceans Canada (DFO).

1.1.2 The intention is to provide enough information so that potential contractors can obtain a clear idea of the project details in order to propose alternatives that will meet the reliability and performance objectives we have set.

1.2 Background

1.2.1 The CCGS *Pierre Radisson* is a Type 1200 vessel in a fleet of three almost identical icebreakers built between 1978 and 1982. The contractor's proposal will apply to the CCGS *Pierre Radisson* only, but it must include an option for similar work on the two other vessels (the CCGS *Amundsen* and the CCGS *Des Groseilliers*).

1.2.2 The speed governors currently in operation on the CCGS *Pierre Radisson* are not of the same model as those operating on the other two vessels. The contractor must take this into account in its technical evaluation, as this could have an impact on the cost of the work for each vessel.

1.3 Schedule

Installation and sea trial dates (CCGS *Pierre Radisson*)

a) All installation work and dockside testing must be completed between October 14 and November 26, 2019.

b) Sea trials will take place between November 26 and December 2, 2019.

c) The system must be fully tested and approved before December 3, 2019

1.4 Basic characteristics of the vessel

Name:	**CCGS *Pierre Radisson***
Type:	T1200 Medium Icebreaker (two fixed-pitch propellers)
Year built:	1978
Identification:	CGSB/IMO: 7510834/MMSI: 316071000
Official CCG number:	383326
Builder:	Burrard Dry Dock, Vancouver, BC
Port of registry:	Ottawa, Ontario
Home port:	Quebec City, Quebec
Length:	98.33 m (322.61 ft.)
Breadth:	19.51 m (64.00 ft.)
Loaded draft:	7.16 m (23.49 ft.)
Gross tonnage:	5,775 t
Net tonnage	1,732 t
Full load displacement:	8,090 mt
Maximum propeller power:	14,960 bhp (11,155 kW)
Maximum speed:	16.9 knots (31.3 km/h)

Table 1 - Basic characteristics of the CCGS *Pierre Radisson*

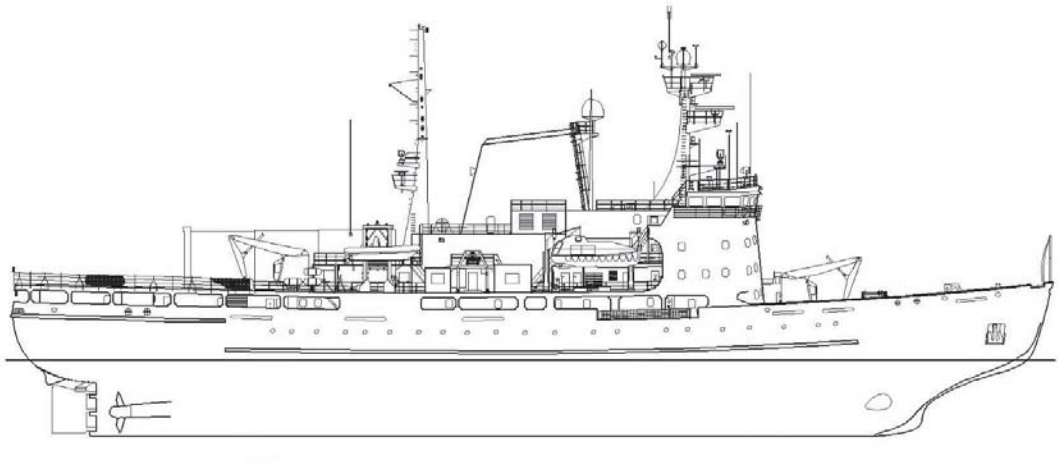

Figure 1 - Side view of the CCGS *Pierre Radisson*

1.5 General information on the diesel engines

Vessels:	CCGS *Pierre Radisson* / CCGS *Amundsen* / CCGS *DesGroseilliers*
Manufacturer:	Fairbanks Morse Engines/ALCO
Model:	251-F
Quantity:	6 per ship
Cylinders:	V16
Power:	2950 hp
Nominal speed under load:	1000 rpm
Nominal speed at start-up:	460 rpm
High speed protection:	1145 rpm (electric) 1180 rpm (mechanical)
Low speed protection:	350 rpm
Flywheel:	Diameter = 137 cm (approximate) Gearing: 318 teeth

Table 2 - Basic characteristics of diesel engines

1.6 General information on the speed control systems to be replaced

As part of this contract, the following speed controllers must be replaced:

1.6.1 Vessel: CCGS *Pierre Radisson* (Contract)

Manufacturer:	Woodward
Model:	UG-40 Part # 8531-0088
Quantity:	6
Speed range:	430-1074 rpm
Electronic controller:	Woodward MAS Part #8525-971 Input: 4-20 mA
Propulsion system signals:	6 mA = 460 rpm / 19.6 mA = 1000 rpm

1.6.2 Vessel: CCGS *Amundsen* (Option 1)

Manufacturer:	Woodward
Model:	PGA Part #8556-522 / 8558-770
Quantity:	6
Speed range:	430-1074 rpm
Control air panels:	Fairchild Transducer #TCX17800-401 Input: 4-20 mA / Output: 3-15 psi
Propulsion system signals:	6 mA = 460 rpm / 19.6 mA = 1000 rpm

1.6.3 **Vessel: CCGS *Des Groseilliers* (Option 2)**

Manufacturer:	Woodward
Model:	PGA Part#8558-770 US/FY
Quantity:	6
Speed range:	430-1074 rpm
Control air panels:	Foxboro #E69F-B12 Input: 4-20 mA / Output: 3-15 psi
Propulsion system signals:	6 mA = 460 rpm / 19.6 mA = 1000 rpm

1.7 General objectives of the new speed controllers

1.7.1 Replace equipment considered to be obsolete (section 1.6).

1.7.2 Improve the efficiency and reliability of the current speed controllers.

1.7.3 Use mass-produced equipment/components available from a North American-based supplier.

1.7.4 Reduce maintenance costs and increase reliability.

1.8 Scope of work (Summary)

As part of this modernization project, the contractor must meet all the technical requirements described in this document and perform the following work:

1.8.1 Check the drawings and technical information of the existing speed control system.

1.8.2 Plan and participate in a vessel visit to evaluate the various features of the current system and its performance in a real operating situation.

1.8.3 Design the entire new system in accordance with applicable regulations and receive all necessary approvals prior to the start of installation (see section 1.11).

1.8.4 Produce all electrical diagrams and other required drawings.

1.8.5 Provide all required technical manuals.

1.8.6 Provide all equipment and components needed to carry out the project, as well as all labour required to produce a final, functional product.

1.8.7 Remove all old equipment, cables or piping that will no longer be needed after the work.

1.8.8 Install and connect all speed control equipment.

1.8.9 Program and calibrate all equipment.

1.8.10 Using a safe procedure, perform commissioning of the new speed governors, including dockside and sea trials to assess performance when the diesel engines are at full power.

1.8.11 Provide various advanced training sessions for CCG personnel in charge of operating and repairing the new equipment (see section 6).

1.8.12 Provide spare parts as per section 4.4

1.9 Technical Reference Documents

Drawings, diagrams, manuals, photos and other information about the current system:

1.9.1 Vessel: CCGS *Pierre Radisson* (Contract)

File No.	File No.	Description
PRD	221-H-101	General Arrangement
PRD	Diesel Engines Control Panel	Diesel Engines Control Panel Schematic 1 to 6
PRD	3AFV5170 1000_403	ABB Propulsion Control System Block Diagram, Diesel Reference Signal
PRD	3AFV5170 2100_441	ABB Port Motor Analog Outputs Signal to Diesel Governor
PRD	3AFV5170 2200_441	ABB Starboard Motor Analog Outputs Signal to Diesel Governor
PRD	Control Signal Converters Rev3	MAS Controller Signal Converter Schematic
PRD	03030_E	UG-40 Governor Product Specification
PRD	03039_C	UG-40 Governor Product Manual

Table 3 - Reference documents (CCGS *Pierre Radisson*)

1.9.2 Vessel: CCGS *Amundsen* (Option)

File No.	File No.	Description
AMD	185B8739_A3N	G.E. Diesel Common Control Schematic
AMD	185B8739_B1E	G.E. Port FWD Breaker Control and Auxiliaries Schematic
AMD	185B8739_B1F	G.E. Port AFT INBRD Breaker Control and Auxiliaries Schematic
AMD	185B8739_B1G	G.E. Port AFT OUTBRD Breaker Control and Auxiliaries Schematic
AMD	185B8739_B2G	G.E. Port Page related relays driven from out page schematic
AMD	185B8739_B6I	G.E. Port Diesel Speed Control Schematic
AMD	185B8739_C1E	G.E. STBD FWD Breaker Control and Auxiliaries Schematic
AMD	185B8739_C1F	G.E. STBD AFT INBRD Breaker Control and Auxiliaries Schematic
AMD	185B8739_C1G	G.E. STBD AFT OUTBRD Breaker Control and Auxiliaries Schematic
AMD	185B8739_C2G	G.E. STBD Page related relays driven from out page schematic
AMD	185B8739_C6I	G.E. STBD Diesel Speed Control Schematic
AMD	166C2236_01	G.E. Diesel Electro-Pneumatic Speed Control Panel AFT Engine Room
AMD	166C2236_02	G.E. Diesel Electro-Pneumatic Speed Control Panel AFT Engine Room
AMD	166C2237_01	G.E. Diesel Electro-Pneumatic Speed Control Panel FWD Engine Room
AMD	166C2237_01	G.E. Diesel Electro-Pneumatic Speed Control Panel FWD Engine Room
AMD	222-725-1	AMD Diagram of control air system – Main Engines
AMD	222-725-2_01	AMD Control Air for Main Engines
AMD	PGA_Outline	Woodward PGS Governor Outline
AMD	AMD DP 1-6 rev 04	AMD Main Engines Starting Panels 1–6
AMD	MI-11112B	Governor Control Linkage (PGA)

Table 4 - Reference documents (CCGS *Amundsen*)

1.9.3 Vessel: CCGS *DesGroseilliers* (Option)

File No.	File No.	Description
DGR	68-2310-1	Compressed Air Diagram
DGR	68-2310-2	Main Engines Control Air Diagram
DGR	0182C3244AA_01	G.E. Diesel Electro-Pneumatic Speed Control Panel AFT Engine Room
DGR	0182C3244AA_02	G.E. Diesel Electro-Pneumatic Speed Control Panel AFT Engine Room
DGR	0182C3244AB_01	G.E. Diesel Electro-Pneumatic Speed Control Panel FWD Engine Room
DGR	0182C3244AB_02	G.E. Diesel Electro-Pneumatic Speed Control Panel FWD Engine Room
DGR	3AFV15170 2100E_441	ABB Port Motor Analog Outputs Signal to Diesel I/P Converter
DGR	3AFV15170 2200E_441	ABB Starboard Motor Analog Outputs Signal to Diesel I/P Converter
DGR	DGR Engines Starting Panels 1-6 rev 09	Diesel Engines Control Panel Schematic 1 to 6
DGR	PGA_Outline	Woodward PGA Governor Outline
AMD	MI-11112B	Governor Control Linkage (PGA)

Table 5 - Reference documents (CCGS *Des Groseilliers*)

1.9.4 Regulations and applicable official documents

Contract	Description	Availability
TP127E	Ships Electrical Standards (2008) Transport Canada	www.tc.gc.ca
IEEE 45	IEEE Recommended Practice for Electrical Installations on Shipboard (2002)	ieeexplore.ieee.org ISBN: 0-7381-3381-7
IACS UR E	Unified Requirements Concerning Electrical Installations (2010)	www.iacs.org.uk
CSA C22.1-12	Canadian Electrical Code, Part I (22nd edition), Safety Standard for Electrical Installations	Shop.csa.ca
CSA C22.2 NO. 0-10	General Requirements - Canadian Electrical Code, Part II	Shop.csa.ca
SOR/2010-120	Canada Labour Code – Maritime Occupational Health and Safety Regulations	lois-laws.justice.gc.ca
SOR-90-264	Marine Machinery Regulations (2014)	lois-laws.justice.gc.ca
IEC 60812	Analysis techniques for system reliability – Procedure for Failure Mode and Effects Analysis (FMEA) – Second Edition	webstore.iec.ch
IEC 60533	Electrical and electronic installations in ships – Electromagnetic compatibility	webstore.iec.ch
IEC 60092-504	Electrical installations in ships – Part 504: Special features – Control and instrumentation	webstore.iec.ch

Table 6 - Reference documents (Regulations)

1.10 Abbreviations/Acronyms

AC	Alternating current
ACL	Affichage à cristaux liquide (LCD in English)
AT	Autorité technique (TA in English)
AWG	American wire gauge
CA	Courant alternatif
CC	Courant continu
CCG	Canadian Coast Guard (GCC in French)
CCGS	Canadian Coast Guard Ship (NGCC in French)
CCM	Centre de contrôle de moteur (MCC in English)
CPU	Central processing unit
DC	Direct current
DFO	Department of Fisheries and Oceans (MPO in French)
DP	Demande de proposition (RFP in English)
DRP	Design review package
DSIP	Delegated Statutory Inspection Program (PDIO in French)
E/S	Entrées/sorties (for PLC) (I/O in English)
ECR	Engine control room
EDT	Énoncé des travaux (SOW in English)
EGCS	Engine Governor Control System
FAT	Factory acceptance test
FDP	Final documentation package
FMEA	Failure mode and effects analysis
FSM	Fleet Safety Manual (MSF in French)
FSR	Field service representative
GCC	Garde Côtière Canadienne (CCG in English)
HDD	Hard disk drive
HMI	Human-machine interface
I/O	Input/output (E/S in French)
IACS	International Association of Classification Societies
ISM	International Safety Management
ITP	Inspection and Test Plan
LCD	Liquid crystal display (ACL in French)
LED	Light-emitting diode
MCC	Motor control centre (CCM in French)
MPO	Ministère des Pêches et des Océans (DFO in English)
MSF	Manuel de sécurité de la flotte (FSM in English)

NGCC	Navire de la Garde Côtière Canadienne (CCGS in English)
PCC	Propulsion control console
PCQ	Plan de contrôle de la qualité (QCP in English)
PCS	Propulsion control system (SCP in French)
PDIO	Programme de délégation des inspections obligatoires (DSIP in English)
PDP	Preliminary design package
PLC	Programmable logic controller (Automate programmable in French)
PVN	Prolongement de vie navires (VLE in English)
QCP	Quality control plan (PCQ in French)
RFP	Request for proposal (DP in French)
SCP	Système de contrôle de propulsion (PCS in English)
SMTC	Sécurité Maritime Transport Canada (TCMS in English)
SOW	Statement of work (EDT in French)
SSD	Solid-state drive
Stbd.	Starboard (Tribord in French)
TA	Technical Authority (AT in French)
TC	Transport Canada
TCMS	Transport Canada Marine Safety (SMTC in French)
UPS	Uninterruptible power supply
VLE	Vessel Life Extension (PVN in French)

1.11 Approvals and regulations

1.11.1 The main components of the proposed new speed control system must be approved for marine use by a recognized classification society. Bidders must provide the certificates ("Type Approval") demonstrating that the system is approved for marine use with its bid.

The list of the classification societies recognized by Transport Canada (TCMS) is available at this web address:

http://www.tc.gc.ca/eng/marinesafety/dvro-fsc-dspi-1781.htm

1.11.2 Once the contract is awarded, CCG will engage the services of a recognized classification society to monitor the various stages of the project. The contractor must obtain approval of all technical details from this classification society, including drawings approval and a commissioning inspection. The cost for the classification society's services will be covered by CCG, and bidders must not include these costs in their financial proposal.

1.11.3 Through the selected classification society, the contractor must ensure that the replacement systems used meet Transport Canada's equipment classification requirements and that the entire project receives all necessary and specific approvals for a vessel of this class. It must plan and coordinate all regulatory inspections and classification surveys in collaboration with the respective authority. All official documents must be approved and signed by the Technical Authority (TA) and the classification society.

1.11.4 Prior to the installation work, the contractor must provide the TA with an official document describing all the tests that will be performed during final commissioning. The document must describe all the steps to verify the proper functioning of the speed regulators during dockside tests and sea trials. If necessary, the TA may request additional tests if he/she deems it necessary. The commissioning procedure must be carried out in the presence of the TA and the classification society representative. Acceptance of the system will become official only once the documents are signed by the TA and the classification society representative.

1.11.5 All new electrical installations for this project must comply with Transport Canada's TP127 (Electrical Standards for Ships) and IEEE 45 (Recommended Practice for Electrical Installations on Shipboard) standards.

1.12 Occupational health and safety

1.12.1 The contractor and all subcontractors must comply with occupational health and safety (OHS) measures in accordance with relevant federal and provincial regulations so that the contractor's activities are conducted safely and without compromising the safety of any staff member.

1.12.2 While working on the vessel while it is under the care and custody of CCG, the contractor must follow the CCG Safety Management System:

a) The contractor and all its representatives must attend a vessel safety orientation session prior to the commencement of any work to familiarize the contractor's employees with the vessel's hazards and its work protocol permit systems, as well as with the procedures for safety, risk prevention, hazard response and the safety assessments prior to the work. The contractor will have access to an uncontrolled copy of the Fleet Safety and Security Manual.

b) The contractor must comply with the Fleet Safety and Security Manual (DFO/5737), the instructions for working aboard the vessel, and the relevant requirements of the *Canada Labour Code* during performance of the following types of work:

I. Working at heights

II. Entry into confined spaces

III. Gas-freeing before entering confined spaces and for hot work

IV. Lock-out/tag-out

V. Safety assessments before the work

1.12.3 All sources of electrical power in connection with the work to be performed must be locked out. This operation must be done in conjunction with the Electrical Officer on duty on the vessel and in accordance with the safety standards established by the CCG (Fleet Safety Manual, sections 7.B.5 and 7.B.6). For lock-out/tag-out procedures, in addition to the mechanisms provided to the vessel's crew by the Chief Engineer, the contractor must provide padlocks and locking devices to its employees. A list of locked-out circuits must be produced and updated throughout the work.

1.12.4 All welding jobs must be individually approved by the Chief Engineer on board the vessel. Every welding job requires a valid work permit in accordance with CCG standards and procedures (see Fleet Safety Manual, section 7.B.4).

1.12.5 Places that present a hazard due to the work must be secured and clearly marked. If necessary, signs or safety barriers must be installed to inform and protect employees, in accordance with the standards applicable under the *Canada Labour Code*.

1.12.6 The contractor must designate a specific person to be responsible for the management of workplace safety. The Safety Manager must ensure that daily safety rounds are conducted, safety issues are identified, and safety precautions are maintained.

1.12.7 The contractor must comply with the safety procedures and instructions of local land-based facilities.

1.12.8 The contractor must ensure compliance with the *Non-smokers' Health Act*. The contractor must ensure that no one, whether its employees or its subcontractors, smokes on board the vessel.

2.0 Technical Requirements – Equipment Design and Specifications

2.1 General

2.1.1 It is the contractor's responsibility to fully control all technical details surrounding this project and to ensure that the work requested, as specified in this document, is performed to the complete satisfaction of the TA, which includes providing all items and work deemed necessary to allow for satisfactory and safe operation.

2.1.2 The contractor must identify all modifications to be made so that the new speed controllers mechanically and electrically adapt to the six existing diesel engines, as well as to the propulsion control system that manages the diesel engine speed reference signal.

2.1.3 With respect to control logic sequences and control functions, the new system must be designed in such a way that it is impossible for an operator to cause equipment failure by using the various manual controls improperly.

2.1.4 The entire system must be designed to provide constant protection for people and power generation equipment in the event of a power failure or loss of power to any component of the control equipment. In other words, the new system must be fail-safe.

2.1.5 The contractor must select mass-produced equipment/components readily available from original manufacturers or suppliers already in the Canadian or U.S. maritime market. Experimental or custom-made products are not accepted for this project.

2.1.6 All equipment, components and other materials used must be new.

2.1.7 The selected equipment must not be affected by the use of portable communication devices on the vessel. These devices are UHF-type and broadcast with a power of 5 watts over a band varying between 136 and 870 MHz. They are frequently used in the vessel's engine room.

2.2 Features and performance of the new speed control system

2.2.1 The new actuators proposed by the contractor can be only of two types:

a) Hydraulic Powered Electric Actuator, or;

b) All-electric type, with a brushless servomotor.

2.2.2 The actuators must be able to exert a continuous minimum force of 70 Newton-metres (Nm) to the fuel intake mechanism of each diesel engine.

2.2.3 Under normal and stable operating conditions of the propulsion system at Full Ahead, the speed of the diesel engines must be able to be maintained at 1000 rpm (±2 rpm). When a

maximum propeller speed change is requested (Maximum Forward <> Maximum Reverse), the diesel engine speed must not vary beyond ±25 rpm.

2.2.4 The contractor is responsible for mechanically adapting the new actuator to the diesel fuel intake mechanism. This mechanical link must allow the same stroke to be maintained as on the existing installation. The mechanical link must also make it possible to maintain the existing springs used to reduce the fuel intake to zero in the event of a fault or loss of power.

2.2.5 For each diesel engine, the control system must have two proximity sensors installed on the flywheel of the diesel engines to measure their speed. These two sensors must operate in redundancy so that the system can remain functional in the event of a failure of one of the sensors. Speed sensors must be installed to allow easy replacement in the event of a failure and must be easily accessible for cleaning. The contractor is responsible for manufacturing a solid and resistant support to fix the two speed sensors in place.

2.2.6 The main electronic control module for speed control must be digital with an integrated CPU. This digital control module must be programmable using a PC laptop operating on Windows 7 or higher. The contractor must provide all communication accessories and the latest complete version of the licensed software to allow programming of the electronic controller. The contractor does not need to provide a PC.

2.2.7 The main control module must be compatible with the speed reference signal from the propulsion control system (4–20 mA).

2.2.8 The main control module must have an analog output to measure the mechanical position of the actuator.

2.2.9 In the event of a major failure of the speed control system, an alarm must be emitted by the central control unit and the actuator must be reset to zero in order to automatically shut off the diesel fuel supply.

2.2.10 The main control module must have digital inputs for the emergency shutdown of the diesel engine. This function must be adapted to the two existing emergency stop pushbuttons located on the local control panel and in the control room.

2.2.11 The speed control system must have one or more alarm contacts to detect a system fault. This contact(s) must be of the "dry" type to allow a connection to the existing engine room alarm system.

2.2.12 The starter panel of each diesel engine includes a three-position selector switch. The contractor must preserve these same features:

a) Position 1 – "LOCAL": The diesel engine is automatically adjusted to a fixed speed of 460 rpm. The propulsion system is not in control of the diesel engine.

b) Position 2 – "REMOTE": The propulsion system controls the diesel engine speed via a 4 - 20 mA signal from the control room (6 mA = 460 rpm / 19.6 mA = 1000 rpm).

c) Position 3 – "TEST": In this mode, it is possible to control the diesel engine speed locally for maintenance and verification purposes (430 to 1074 rpm). In this mode, the propulsion system has no control over the speed of the diesel engine.

2.3 Power supply for new equipment

2.3.1 A 120 VAC / 8 Amp single-phase uninterruptable power supply (UPS) is available near each of the diesel engines to power the new speed control equipment (6x 120 VAC / 8 A sources, one per diesel). If these power sources are insufficient to supply the new equipment, two-460VAC / 3PH / 20A circuits located in the control room will be made available to the contractor. In this case, the contractor will be responsible for supplying and installing all distribution circuits required to power the new equipment. This could include, but is not limited to:

a) Power supply cables
b) Transformers
c) Distribution Panels
d) Power supply units, 24 VDC or others
e) Uninterruptible power supply (UPS) system, if required by marine regulations.

Note: The two groups of diesel engines 1-2-3 (port) and 4-5-6 (starboard) must be powered by independent circuits to ensure the operation of at least one propeller in the event of a fault on one of the main power circuits.

2.4 Environmental operating conditions

2.4.1 General

All new equipment selected must be able to minimally and continuously withstand the environmental conditions described in Section 1.5 of the IEEE-45 (2002 Edition).

2.4.2 Weather resistance

All electronic control modules installed in the engine room must be integrated into a watertight cabinet that complies with NEMA 4 or the equivalent.

2.4.3 Shock and vibration resistance

All equipment and components of the new system must have a shock and vibration resistance that considers the specific characteristics of an icebreaking vessel.

All added equipment or components must be properly secured taking into account the high level of vibration found on a vessel of this type. If deemed necessary by the TA, the contractor must provide for the addition of rubber pads to the attachment points of certain equipment to absorb intense vibration.

3.0 Installation of equipment

3.1 General

3.1.1 The contractor must provide all equipment, accessories, tools, and labour required to complete the work.

3.1.2 Newly installed equipment and components must be positioned so that they are accessible for troubleshooting and can be easily replaced if necessary.

3.1.3 The maximum size of new equipment must be properly assessed to ensure that it can be transported to the installation site. Watertight doors represent the smallest opening to reach the vessel's engine room. Internal dimensions of watertight doors are: 72 x 182 cm (28.35 x 71.65 inches).

3.1.4 Transportation from the factory and the movement of equipment inside the vessel is entirely at the contractor's expense.

3.1.5 Welding work required to secure supports or for any other reason is entirely at the contractor's expense, including providing all equipment and qualified labour necessary to perform the work.

3.2 Protection of material and equipment

3.2.1 The contractor must take measures to ensure that existing surrounding surfaces and equipment are protected from damage, dirt, and contaminants produced by the work.

3.2.2 Throughout the work under the contract, all electrical and electronic equipment, and components must be protected against physical damages as well as the effects of temperatures or other adverse environmental conditions.

3.2.3 All surfaces and equipment damaged during the work must be returned to their original condition at the contractor's expense.

3.3 Identification of equipment

3.3.1 Identification plates must be produced for all new equipment or devices installed. The plates must be made of a non-conductive plastic material and must be securely fixed to prevent detachment.

3.3.2 The front of each cabinet must also have an identification plate to generally identify the system(s) inside.

3.3.3 The contractor must remove existing plates that no longer have any use or replace those that no longer provide accurate information as a result of the work.

3.3.4 Unless otherwise specified by the TA, the lettering text must be white on a black background and allow a clear reading. It must briefly but completely display the name or function of the device in English and in French.

3.4 Wiring and connection of equipment

3.4.1 List of wiring work

Before the work begins, the contractor must provide a detailed list of the new cables required for the installation of the new system.

3.4.2 Old cables to be removed

All old cables and conductors that are no longer needed must be removed by the contractor. If any of these cables pass through a watertight bulkhead or firewall, the hole left by its removal must be properly sealed (transit block or cable gland). The addition of a silicone caulking is not accepted to seal holes.

3.4.3 New conductors and cables

3.4.3.1 The new conductors and cables selected must be adapted to the function for which they are intended. They must meet all marine standards described in section 12 of document TP127.

3.4.3.2 Cables used for the communication or transport of analog signals must be industrial in type and must have an element of protection against interference (a shield). The outer jacket of the cable must also be able to adequately withstand mechanical stresses.

3.4.3.3 A minimum of 10% of spare conductors must be provided inside each of the new control cables to allow for future modifications.

3.4.4 Passage and fixing of cables/conductors

3.4.4.1 All cables/conductors must be fixed and/or passed using the existing supports and the various cable trays. If necessary, the contractor must provide for the inclusion of additional supports or cable trays to adequately secure or hold the wiring into place.

3.4.4.2 If new cables are to pass through a watertight bulkhead, the contractor must use the existing cable transits and ensure that the device is completely watertight after the

work is completed. If new transit blocks are required, the contractor must provide the parts and use the same brand of product.

3.4.4.3 The passage of cables and conductors inside the cabinets must not restrict access to the equipment. It must be easy to maintain the various devices or to replace them if necessary without moving a group of cables.

3.4.5 **Connection and identification of conductors**

3.4.5.1 Individual conductors or conductors integrated into a cable must all end on a terminal block, even if they are not used electrically by the system (spare conductors).

3.4.5.2 Each series of terminal blocks must have an identification code that allows a link to be established with the corresponding electrical diagram(s).

3.4.5.3 All electrical conductors must be individually identified at both ends using labels made of plastic material. The numbering must be written in permanent ink, and must be resistant to dust particles and oily deposits. The label must be easily visible without having to move wires or cables.

3.4.5.4 New cables must be identified under the same conditions as for conductors. If the cable passes through a bulkhead, an additional label must be added on each side of the bulkhead. If environmental conditions are difficult and may prevent the label from being read over the long term, the label must be made of metal and the inscription must be embossed.

3.4.5.5 The number displayed on a conductor must allow for the electrical diagram to be quickly traced back to this part of the circuit and to determine to which system it belongs (e.g. Diesels 1-2-3-4-5-6).

3.5 Cleanliness and access to workplaces

3.5.1 The various workplaces must be kept clean when removing old equipment and throughout the process of implementing the new system.

3.5.2 The contractor must ensure that the TA and CCG personnel have safe and unobstructed access to the work site throughout the duration of the contract.

3.5.3 When the installation is completed, a thorough cleaning must be done to remove all dirt and residue.

3.6 Removal and disposal of old equipment

3.6.1 The Contractor is responsible for removing all old equipment that will no longer be useful following this modernization project. All old equipment, cables and other materials that no longer have any use following modernization works remain the property of CCG. If the TA determines that certain equipment should be sent for disposal, the contractor will be responsible for transporting this equipment to waste containers located on the dock near the ship.

4.0 Commissioning and technical support

4.1 Commissioning of the vessel

4.1.1 It is the contractor's responsibility to develop a detailed commissioning program that tests the individual operation of the various equipment as well as the entire speed control system and its overall performance.

4.1.2 The contractor must maintain a complete and accurate record of all tests and trials performed on the vessel or on each piece of equipment. Before starting a test, all relevant test sheets and documents, including workshop test data, must be completed and attached to the test program.

4.1.3 Sea trials must be planned to analyze the performance of the system under different operating conditions. The results obtained from these tests must be compared with the performance observed on the old control system in order to measure the effectiveness of the new system. It is the contractor's responsibility to make any necessary modifications and/or adjustments to achieve superior performance.

4.2 Warranty and technical support

4.2.1 The terms and conditions of the warranty are detailed in the Request for Proposal, section 7.2.1.

4.3 Maintenance and verification tools

4.3.1 The contractor must provide any special software, devices and other accessories that may be required to program the digital speed controller or to service the electrical actuators.

4.4 Spare parts

4.4.1 The contractor must provide the following spare parts with the contract:

Note: Spare parts must be delivered before the end of the installation period.

a) Two complete actuators, including all new mechanical parts used to adapt the actuators to the diesel fuel intake mechanism;

b) Two digital central control units, preadjusted and preprogrammed for quick installation. If the speed control system has other electronic modules, the contractor must provide two additional units of each of these modules. This includes all power supplies that may be required to adapt the control voltage;

c) Two devices for local manual control of diesel speed;

d) Four speed sensors.

4.4.2 The contractor must provide a complete list of the components used to complete the project. This information will be used as a reference when purchasing spare parts in the future. This list must include the following information for each part:

a) Manufacturer's part number
b) A description/usage instructions
c) The manufacturer's name
d) The quantity installed on board the vessel

5.0 Documentation

5.1 Preliminary design package (PDP)

Bidders must submit with their proposal a preliminary design package (PDP) to allow CCG to evaluate the proposed system.

This package must contain at least the following information:

a) Preliminary schedule of timelines to complete the project;
b) List of all new main equipment to be used (actuator and control modules);
c) Detailed technical manuals of the main equipment to be used;
d) Block diagram of the system, as it will be installed on board the ship;
e) Certificates issued by a recognized classification society to demonstrate that the main equipment is approved for marine use ("type approval").

5.2 Design review package (DRP) documents

The contractor must submit design and approval documents (DRPs) to the TA within 12 weeks of contract award to allow CCG to review the project details and request modifications if necessary. CCG plans to use two weeks to conduct its own review and an additional eight weeks to obtain approval from a classification society.

The DRP produced by the contractor must include the following elements:

a) Update of the project implementation schedule;
b) Complete physical layout of the various equipment/components as they will be installed on the ship;
c) Details on wiring/connecting of new systems and their integration with existing equipment;
d) All schematic drawings and diagrams (electrical and mechanical);
e) Details on programming and initial adjustment of parameters;
f) Details on the method used to adjust and evaluate the performance of the new speed control units during dockside and sea trials.

5.3 Final documentation package (FDP)

The final documentation package (FDP) must be provided after the new system has been fully installed and tested. This should include:

a) Final report on the dockside and sea trials of the new system, as well as all other official documents required;
b) Final version of all as-fitted drawings;
c) Final version of all programming data, configuration parameters and other adjustments. A backup of all programs must be provided on a digital medium (USB key);
d) All technical manuals (in English and French): operation, maintenance and troubleshooting;
e) All factory test reports performed on the main equipment;
f) Complete list of components used, including model number, description, manufacturer and installed quantity.

5.4 Drawings and other technical documents

5.4.1 The contractor must produce all the technical drawings and documents necessary for the design and execution of the work. The technical drawings must make it possible to visualize all the equipment and circuits of the new speed control system. It must provide all the necessary information to enable a qualified technician to conduct a quick, complete and accurate search in the event of defects or for any other reason.

5.4.2 Overall, the drawings must integrate or describe all of the following elements:

a) Cover pages and detailed indexes of the drawings;
b) Abbreviations and symbols used;
c) Identification and specification of equipment;
d) Location of equipment;
e) Block diagrams providing an overview of the main systems;
f) Power supply circuits;
g) Wiring and interconnection between the different equipment;
h) Any other references or details required to understand the system.

5.4.3 All drawings must be individually presented in digital format in the most recent version of the DWG standard (AutoCAD) and allow printing optimized for the 11x17 inch standard (ANSI B). An exception in the size of some drawings is possible in order to provide an adequate overview of the entire system, provided that they are presented in a separate

series. A consolidated PDF (Adobe) version must also be provided for each set of drawings to facilitate computer viewing (one PDF file per set of drawings).

5.4.4 Drawings that are used during the work must be maintained up-to-date as the installation progresses and additional approval is required for any significant changes to the original version. A list of changes must be created and maintained to track the history of changes throughout the installation process.

5.4.5 A final and approved version of the drawings as built (or "as fitted") must be provided at the end of the project and delivered in three (3) hard copies. The various series of drawings printed in 11 x 17 (ANSI B) format must be properly linked together. The digital version of the drawings must also be provided (DWG and PDF). DWG files (AutoCAD) should not be protected electronically and the CCG should have the ability to change all elements if necessary in case of future modifications.

5.4.6 Written information on the drawings may be written in English only. This does not apply to technical operation and maintenance manuals, which must be provided in French and English.

5.5 Operation, maintenance and troubleshooting manuals

5.5.1 The manuals must be delivered in three (3) hard copies (including an English and French version). Each set of manuals must include a USB key that integrates all documents in digital format into the PDF format.

5.5.2 These manuals must be addressed to qualified technicians and provide in detail all the information necessary for the understanding, repair and maintenance of speed controllers.

5.5.3 The following is a summary of the information that manuals must at least provide:

a) Overall description of the system (design, specifications and operation);
b) List of recommended periodic maintenance;
c) Methods of checking the functioning of equipment and protections;
d) Troubleshooting, adjustment and calibration procedures;
e) Replacement methods for main components;
f) Complete list of potential defects/alarms and possible solutions.

6.0 Training

6.1 Training for CCG personnel must be included in this contract and provided by one or more specialized technical representatives. If any of the equipment requires additional expertise, the contractor must hire an expert technician to properly cover the entire training.

6.2 The training must be given in French, directly on board the ship. If no technician is available to communicate in French, the contractor must provide a translator if requested by CCG personnel.

6.3 The training must be a minimum of 15 hours (two days) and offered twice to reach all employees, for a total of 30 hours over four days. The two 2-day training sessions will be given at least one week apart.

Possible dates of training:

a) Crew A (2 Days): Between Nov 6 and Dec 1st, 2019
b) Crew B (2 Days): Between Oct 28 and Nov 3 OR between Dec 4 and Dec 6, 2019

6.4 This training must include both theoretical and practical aspects. It should allow each participant to become familiar with the following elements:

a) Overview of the system and theory of operation;
b) Equipment maintenance procedure;
c) Procedure for replacing and adjusting actuators;
d) Procedure for replacing electronic control units;
e) Programming of parameters;
f) Troubleshooting method, identification of faults and alarms;
g) Case study of potential technical problems and possible solutions.

6.5 As a reminder, the contractor must provide each participant with a document that summarizes all important information. This document must include a French and an English version.

END OF ANNEX "A"