



RETURN BIDS TO:

RETOURNER LES SOUMISSIONS À:

Réception des soumissions - TPSGC / Bid

Receiving - PWGSC

1550, Avenue d'Estimauville

1550, D'Estimauville Avenue

Québec

Québec

G1J 0C7

INVITATION TO TENDER

APPEL D'OFFRES

**Tender To: Public Works and Government Services
Canada**

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

Soumission aux: Travaux Publics et Services Gouvernementaux Canada

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

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

TPSGC/PWGSC

601-1550, Avenue d'Estimauville

Québec

Québec

G1J 0C7

Title - Sujet Winter Work Sorel Ships (4)	
Solicitation No. - N° de l'invitation F3065-16N717/B	Date 2017-01-09
Client Reference No. - N° de référence du client F3065-16N717	GETS Ref. No. - N° de réf. de SEAG PW-\$QCL-036-17013
File No. - N° de dossier QCL-6-39319 (036)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2017-01-31	
Time Zone Fuseau horaire Heure Normale du l'Est HNE	
F.O.B. - F.A.B.	
Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Gagnon, Mathieu	Buyer Id - Id de l'acheteur qcl036
Telephone No. - N° de téléphone (418) 649-2883 ()	FAX No. - N° de FAX (418) 648-2209
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: NGCC FCG Smith Leim, Ile Saint-Ours et Garde-côte 03 Pêches et Océans Canada- Garde Côtière 101 BOUL.CHAMPLAIN R.C. QUEBEC Québec G1K7Y7 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée Voir doc	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

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PART 1 - GENERAL INFORMATION

1.1 Introduction

The bid solicitation and resulting contract document is divided into seven parts plus annexes as follows:

- | | |
|---------------|---|
| Part 1 | General Information: provides a general description of the requirement; |
| Part 2 | Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation and states that the Bidder agrees to be bound by the clauses and conditions contained in all parts of the bid solicitation; |
| Part 3 | Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid; |
| Part 4 | Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, if applicable, and the basis of selection; |
| Part 5 | Certifications: includes the certifications to be provided; |
| Part 6 | Security, Financial and Other Requirements: includes specific requirements that must be addressed by bidders; and |
| Part 7 | Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract. |

The Annexes include the Requirement, the Basis of Payment and other annexes.

1.2 Summary

- (i) The requirement is:
 - a) To carry out the ship repair work regarding the Canadian Coast Guard Ships (C.C.G.S.) Leim, (C.C.G.S.) Ile Saint Ours, (C.C.G.S.) Garde-Côte 03 and (C.C.G.S.) FCG Smith during the winter layout at the Sorel Wharf of the Canadian Coast Guard Base, Sorel, QC, in accordance with the associated Technical Specifications detailed in the Requirement attached as Annex A.
 - b) To carry out any approved unscheduled work not covered in paragraph a) above.
- (ii) 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 10 Annex 1001.2b Paragraph 1, however, it is subject to the Agreement on Internal Trade (AIT).

1.3 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from 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 (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

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

The 2003 (2016-04-04) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation. Bidders can also submit their bid by facsimile at (1) 418-648-2209, by the date, time and place indicated on page 1 of the bid solicitation.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than **seven (7)** calendar days before the bid closing date. Enquiries received after that time may not be answered.

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

2.4 Applicable Laws

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

2.5 Bidders' Conference

A bidders' Conference chaired by the Contracting Authority will be convened on board vessel CCGS FCG Smith at 10:00 am, January 18th, 2017. The vessel will be moored at Fisheries and Oceans Canada – Coast Guard Wharf, at 15, du Prince Street, Sorel-Tracy (QC) J3P 4J4. **An attendance confirmation is required before 11:00 am, January 15th, 2017.**

It is recommended that the Bidder or a representative of the Bidder attend the Bidders' Conference in order to review the Scope of the Work required and to receive additional information and clarifications. Bidders are to communicate with the Contracting Authority prior to the conference to confirm attendance. Bidders that do not attend are not precluded from submitting a bid. Bidders are to provide the Contracting Authority with the names of their representatives no later than two days prior to the conference. The Contracting Authority will have an attendance form which is to be signed by the Bidder's representative(s) in attendance. Bidders are advised that any clarifications or changes resulting from the Bidder's conference and/or the subsequent viewing of the vessel, shall be included as an amendment to the bid solicitation document.

2.6 Viewing - Vessel

A site visit will be held immediately after the bidders' conference.

2.7 Proposed Work Period

Work is to commence and be completed as follows:

Leim: From the Contract award date to March 29, 2017

Ile Saint Ours: From the Contract award date to April 1, 2017

Garde Côte 03: From the Contract award date to March 27, 2017

FCG Smith: From the Contract award date to March 27, 2017

The Bidder agrees through submission of its response to the bid solicitation that the above time frame provides an adequate period to perform the subject work and absorb a reasonable amount of unscheduled work; and further, that they have sufficient material and human resources allocated or available to complete the subject work and a reasonable amount of unscheduled work within the Work period.

2.8 Docking Facility (*Not used*)

2.9 List of Proposed Sub-contractors

If the bid includes the use of subcontractors, the Bidder agrees, upon written request from the Contracting Authority, to provide a list of all subcontractors including a description of the things to be purchased, a description of the work to be performed by specification section and the location of the performance of that work. The list should not include the purchase of off-the-shelf items, software and such standard articles and materials as are ordinarily produced by manufacturers in the normal course of business, or the provision of such incidental services as might ordinarily be subcontracted in performing the Work, i.e. subcontract work valued at less than \$2000.00

2.10 Quality Plan - Solicitation *(Not used)*

2.11 Inspection and Test Plan *(Not used)*

2.12 Vessel Refit, Repair or Docking - Cost

All charges, fees expenses and disbursements incidental to the carrying out of the Work, including all items described in Supplemental General Conditions 1029 (2010-08-16) Ship Repair, section (07), are included in the Evaluation Price (and in the Contract Price under the Contract), including, without limitation:

1. **Services** *(Not used)*
2. **Docking and Undocking** *(Not used)*
3. **Field Service Representatives/Supervisory Services:** include all costs for field service representatives/supervisory services including manufacturers' representatives, engineers, etc.
4. **Removals:** include all costs for removals necessary to carry out the Work and will be the responsibility of the successful Bidder whether or not they are identified in the specifications, except those removals not apparent when viewing the vessel or examining the drawings. The successful Bidder will also be responsible for safe storage of removed items and reinstalling them on completion of the Work. The successful Bidder will be responsible for renewal of components damaged during removal.
5. **Sheltering, Staging, Cranage and Transportation:** include the cost of all sheltering, staging including handrails, cranage and transportation to carry out the Work as specified.

The successful Bidder will be responsible for the cost of any necessary modification of these facilities to meet applicable safety regulations.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

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

- Section I: Management Bid (1 hard copy)
- Section II: Financial Bid (1 hard copy)
- Section III: Certifications Requirements (1 hard copy)

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

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

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

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

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

Section I: Management Bid

The Management Bid should be concise and should include all the certifications and other requirements as noted in Parts 4 and 6.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Financial Bid Presentation Sheet Annex I and the detailed Pricing Data Sheet, Appendix 1 to Annex I. The total amount of Goods and Services Tax or Harmonized Sales Tax is to be shown separately, if applicable.

Section III: Certification Requirements

Bidders must submit the certifications required under Part 5.

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3.1.2 Unscheduled Work and Evaluation Price

In any vessel refit, repair or docking contract, unscheduled work will arise after the vessel and its equipment is opened up and surveyed. The anticipated cost of the Work will be included in the evaluation of bids. The overall total cost will be calculated by including an estimated amount of additional person-hours (and/or material) multiplied by a firm hourly charge-out labour rate and is added to the firm price for the Work.

The overall total referred to as the "Evaluation Price" will be used for evaluating the bids. The estimated work will be based on historical experience and there is no minimum or maximum amount of unscheduled work nor is there a guarantee of such work.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

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

4.1.1 Financial Bid

Bidders must submit their financial bid in accordance with the Financial Bid Presentation Sheet Annex "I". The total amount of Goods and Services Tax or Harmonized Sales Tax is to be shown separately, if applicable.

4.1.2 Mandatory Criteria

Bids will be assessed in accordance with the entire requirement of the bid solicitation including compliance with the mandatory certifications and table of deliverable requirements as detailed in Parts 2, 4, 5 & 6. Only those bids which are found to meet all the mandatory requirements within the specified time frames will be deemed responsive.

4.1.3 Table of Mandatory Requirements to be met by bid closing

Notwithstanding deliverable requirements specified anywhere else within this solicitation and its associated Technical Specification, the following are the only mandatory deliverables that must be submitted with the Bid at the time of bid closing. The following are mandatory and the Bidder must be compliant on each item to be considered responsive

Item	Description	Completed and Attached
1	Completed Annex "I" Financial Bid presentation Sheet	
2	Completed Appendix 1 to Annex "I" <u>Price Per Item Sheet</u>	
3	Letter or proof of Insurance as per article 6. 13 of Part 6	

4.1.4 Other information upon request only

The following information, which supports the bid, may be requested by the Contracting Authority from the bidder and it must be provided within **two (2)** working days of the written request:

Item	Description	Completed and Attached
1	Proof of welding certification, as per clause 6.7 of Part 6;	Prior to contract award
2	Annex J – Pricing Data Sheet;	Prior to contract award
3	Sub-contract and Sub-contractor List , as per clause 7.15 of Part 7	Prior to contract award

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4.1.5 Deliverables after Contract award

Element	Description	Doit être fourni après l'attribution du Contrat, dans les
1	Insurance Requirements as per article 7.11, Part 7;	5 calendar days
2	Work Schedule and Reports as per article 7.16, Part 7;	5 calendar days
3	Inspections and tests plan as per article 7.28, Part 7	5 calendar days

4.2 Basis of Selection

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

4.3 Public Bid Opening

A public bid opening will be held in Public Works and Government Services Canada, 601-1550, D'Estimauville Ave., Québec, Qc at 02:00 PM (EDST) on the date show at the first page.

Following solicitation closing, bid results may be obtained by calling at No. (418) 649-2888.

PART 5 - CERTIFICATIONS

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

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, 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 made knowingly or unknowingly, during the bid evaluation period or during the contract period.

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

5.1 Certifications Required with the Bid

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

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Ineligibility and Suspension Policy (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide with its bid the required documentation, as applicable, to be given further consideration in the procurement process.

5.2. Mandatory Certifications Required Precedent to Contract Award

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

5.2.1 Code of Conduct and Certifications - Related documentation

In accordance with the Ineligibility and Suspension Policy (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the Employment and Social Development Canada (ESDC) - Labour's website

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(http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969).

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

PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

- 6.1 **Security Requirement** *(Not used)*
- 6.2 **Financial Requirements** *(Not used)*
- 6.3 **Accommodation** *(Not used)*
- 6.4 **Parking** *(Not used)*
- 6.5 **Material and Supply Support** *(Not used)*
- 6.6 **Workers' Compensation - Letter of Good Standing** *(Not used)*
- 6.7 **Welding Certification**

At bids closing date the Bidder should submit evidence demonstrating its certification to the welding standards in accordance with the following:

Welding must be undertaken by a company Certified by the Canadian Welding Bureau (CWB) to the requirements of the following Canadian Standards Association (CSA) standards:

- (a) CSA W47.1, Certification of Companies for Fusion Welding of Steel, section 2;
- (b) CSA W47.2, Certification of companies for fusion welding of aluminum;

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

- 6.8 **Valid Labour Agreement** *(Not used)*
- 6.9 **Work Schedule and Reports** *(Not used)*
- 6.10 **Fueling and De-fueling Crown Vessels** *(Not used)*
- 6.11 **ISO 9001:2000 - Quality Management Systems** *(Not used)*
- 6.12 **Environmental Protection** *(Not used)*
- 6.13 **Insurances Requirements**

At bids closing date the Bidder must provide 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 the bid solicitation, can be insured in accordance with the Insurance Requirements specified in Annex "C".

PART 7 - RESULTING CONTRACT CLAUSES

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

1. Requirement

- a) To carry out the ship repair work regarding the Canadian Coast Guard Ships (C.C.G.S.) Leim, (C.C.G.S.) Ile Saint Ours, (C.C.G.S.) Garde-Côte 03 and (C.C.G.S.) FCG Smith during the winter layout at the Sorel Wharf of the Canadian Coast Guard Base, Sorel, QC, in accordance with the associated Technical Specifications detailed in the Requirement attached as Annex A.
- b) to carry out any approved unscheduled work not covered in paragraph a) Above.

2. Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the *Standard Acquisition Clauses and Conditions* Manual issued by Public Works and Government Services Canada (PWGSC). The Manual is available on the PWGSC Website:
<http://sacc.pwgsc.gc.ca/sacc/index-e.jsp>.

2.1 General Conditions

2030 (2016-04-04), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract (with the exception of Article 26 which is deleted in its entirety and replace with Article 42 here below).

Section 22 of 2030 is amended in Annex E Warranty.

2.2 Supplemental General Conditions

1029 (2010-08-16) Ship Repairs, excluding section 07 & 09 apply to and form part of the Contract.

3. Security Requirement

There is no security requirement associated with this Statement of Work

4. Term of Contract

4.1 Contract period

The contract period is from Contract award date until the end of the warranty period inclusively.

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4.2 Work period

Work is to commence and be completed as follows:

Leim: From the Contract award date to March 29, 2017

Ile Saint Ours: From the Contract award date to April 1, 2017

Garde Côte 03: From the Contract award date to March 27, 2017

FCG Smith: From the Contract award date to March 27, 2017

The Contractor agrees that the above time frame provides an adequate period to perform the subject work and absorb a reasonable amount of unscheduled work; and further, that it has sufficient material and human resources allocated or available to complete the subject work and a reasonable amount of unscheduled work within the Work Period.

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Mathieu Gagnon
Chef aux approvisionnements Marine / Marine Supply Chief
Travaux publics et Services gouvernementaux Canada / Public Works and Government Services Canada
Région du Québec/Québec area
Division marine /marine division
1550, avenue D'Estimauville, Québec, (Québec) G1J 0C4,
Quebec, Canada
mathieu.gagnon@tpsgc-pwgsc.gc.ca
Téléphone/phone: (418) 649-2883
Télécopieur/Fax: (418) 648-2209

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

5.2 Technical Authority

The Technical Authority for the Contract is:

Name will be determined at Contract award

Telephone: ____

Facsimile: ____

E-mail address: ____

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.

5.3 Inspection Authority/Inspector

The Inspection Authority for the Contract is:

See section 5.2

The Inspection Authority is the Department of Public Works and Government Services Canada, who for the purposes of this requirement is the inspector responsible for inspection of the work and acceptance of the finished work under this requirement. The Inspection Authority will be represented on-site by a designated inspector and such other Government of Canada inspectors who will from time to time be assigned in support of the designated Inspector.

6. Payment

6.1 Basis of Payment - Firm Price

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid the firm price indicated in Annex B. Goods and Services Tax or Harmonized Sales Tax is extra, if applicable. Payment for unscheduled work will be done in accordance with Basis of Payment outlined at Annex B.

6.2 Payment Terms - Progress Payments

1. Canada will make progress payments in accordance with the payment provisions of the Contract, no more than once a month, for cost incurred in the performance of the Work, up to 90 percent of the amount claimed and approved by Canada if:
 - (a) an accurate and complete claim for payment using form PWGSC-TPSGC 1111, Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
 - (b) the amount claimed is in accordance with the basis of payment;
 - (c) the total amount for all progress payments paid by Canada does not exceed 90 percent of the total amount to be paid under the Contract;
 - (d) all certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives.
2. The balance of the amount payable will be paid in accordance with the payment provisions of the Contract upon completion and delivery of all work required under the Contract if the Work has been accepted by Canada and a final claim for the payment is submitted.
3. Progress payments are interim payments only. Canada may conduct a government audit and interim time and cost verifications and reserves the rights to make adjustments to the Contract from time to time during the performance of the Work. Any overpayment resulting from progress payments or otherwise must be refunded promptly to Canada.

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6.3 SACC Manual Clauses

SACC Manual Clause C6000C (2011-05-16)
SACC Manual Clause H4500C (2010-01-11)

Limitation of Price
Lien - Section 427 of the Bank Act

7. Invoicing Instructions

7.1 Submitting of invoices

The Contractor must submit invoices in accordance with the information required in Section 13 of 2030, (2016-04-04), General Conditions - Higher Complexity - Goods

7.2 Invoice

7.2.1 Transmission of invoices

Invoice to be made to the name of:

DFOinvoicing-MPOfacturation@dfo-mpo.gc.ca

[REDACTED]

Mailing Address :

Pêches et Océans Canada
PO Box 1901, STN A
Fredericton (Nouveau-Brunswick)
E3B 5G4

Electronic copy to be sent for verification to:

mathieu.gagnon@tpsgc-pwgsc.gc.ca

7.3 Warranty Holdback

A warranty holdback of 10% of the total contract price as last amended (applicable taxes excluded) will be applied to the final claim for payment. This holdback will be payable by Canada upon the expiry of the 90 day warranty period(s) applicable to the work. Applicable taxes are to be calculated and paid on the total amount of the claim before the 10% holdback is applied. At the time that the holdback is released, there will be no applicable taxes payable, as it was included in previous payments.

8. Certifications

8.1 Generality

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

9. Applicable Laws

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

10. 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 Supplemental General Conditions 1029, (2010-08-16), Ship Repairs;
- (c) General Conditions 2030, (2016-04-04) - Higher Complexity - Goods;
- (d) Annex A, Requirement;
- (e) Annex B, Basis of Payment;
- (f) Annex C, Insurance Requirements;
- (g) Annex E, Warranty;
- (h) the Contractor's bid dated _____.

11. Insurance Requirements

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

The Contractor is responsible to decide 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 will be at the Contractor's expense, and for its own benefit and protection.

The Contractor must forward to the Contracting Authority within cinq (5) calendar days after the date of award of the Contract a Certificate of Insurance including details of the insurance coverage, exclusions, deductibles and conditions and confirming that the insurance policy complying with the requirements is in force. The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

12. Financial Security *(Not used)*

13. Accommodation *(Not used)*

14. Parking *(Not used)*

15. Sub-contracts and Sub-contractor List

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

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

16. Work Schedule and Reports

No later than **five (5) calendar days** after contract award, the preliminary schedule must be revised and expanded as necessary and resubmitted before commencement of the Work.

The Contractor must provide a detailed work schedule showing the commencement and completion dates for the Work in the available work period, including realistic target dates for significant events. During the Work Period the schedule is to be reviewed on an ongoing basis by the Inspection Authority and the Contractor, updated when necessary, and available in the Contractor's office for review by Canada's authorities to determine the progress of the Work.

Production work schedules must be revised and resubmitted before each Progress Meeting. The revised schedules must show the effect of progressed work and approved work arisings. Changes in scheduled completion dates due to unscheduled work will not be accepted except as negotiated under Design Change or Additional Work, Article 26.

17. 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.

18. Loan of Equipment - Marine (*Not used*)

19. Trade Qualifications

The Contractor must use qualified, certificated (if applicable) and competent tradespeople and supervision to ensure a uniform high level of workmanship. The Inspection 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

20. Material and Supply Support (*Not used*)

21. ISO 9001:2000 - Quality Management Systems (*Not used*)

22. Quality Control Plan (*Not used*)

The Contractor must implement and follow the Quality Control Plan (QCP) prepared according to the latest issue (at contract date) of ISO 10005 Quality management - Guidelines for quality plans, approved by the Inspection and Technical Authorities. The QCP shall describe how the Contractor will conform to the specified quality requirements of the Contract and specify how the required quality activities are to be carried out, including quality assurance of subcontractors. The Contractor must include a traceability matrix from the elements of the specified quality requirements to the corresponding paragraphs in the QCP.

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

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

Refer to Annex "D" for further details on the Quality Control Plan requirements.

23. Welding Certification

Welding must only be undertaken by a company Certified by the Canadian Welding Bureau (CWB) to the requirements of the following Canadian Standards Association (CSA) standards:

- (a) CSA W47.1, Certification of Companies for Fusion Welding of Steel, section 2.
- (b) CSA W47.2, Certification of companies for fusion welding of aluminum;

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

Before the commencement of any fabrication work, and upon request from the Inspection 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.

24. Environmental Protection

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

The Contractor must have detailed procedures and processes for identifying, removing, tracking, storing, transporting and disposing of all potential pollutants and hazardous material encountered, to ensure compliance as required above.

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

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

25. Fueling and De-fueling a Crown Vessel *(Not used)*

26. Procedure for Design Change or Additional Work

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

26.1 Price Breakdown:

The Contractor must, upon request, provide a price breakdown for all unscheduled work, by specific activities with trades, person-hours, material, subcontracts and services.

26.2 Pro-rated Prices:

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

27. Equipment/Systems: Inspection/Test *(Not used)*

28. Inspection and Test Plan

The Contractor shall, in support of their QCP, implement an approved Inspection & Test Plan (ITP).

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

Refer to Annex "D" for details on Inspection and Test Plan Requirements.

29. Vessel Custody *(Not used)*

30. Vessel manned Refits

SACC Manual Clause A0032C (2011-05-16) Vessel Manned Refits

31. Pre-Refit Meeting

A Pre-Refit meeting will be convened and chaired by the Contracting Authority at the work site, before the commencement of the work period.

32. Meetings

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

33. Outstanding Work and Acceptance

The Inspection Authority, in conjunction with the Contractor, will prepare a list of outstanding work items towards the end of the vessel Work Period. This list will form the annexes to the formal acceptance document for the vessel. A Contract Completion Meeting will be convened by the Inspector on the work completion date to review and sign off the Acceptance Document. In addition to any amount held under the Warranty Holdback Clause, a holdback of twice the estimated value of outstanding work will be held until completion of said work.

The PWGSC-TPSGC 1205 Acceptance Document is to be completed and distribution is to be made by the Public Works and Government Services Canada Inspection Authority as follows:

- (a) original to the PWGSC Contracting Authority
- (b) one copy to the Technical Authority
- (c) one copy to contractor

34. Licensing

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

35. Hazardous Waste - Vessels

SACC Manual Clause A0290C (2008-05-12) Hazardous Waste - Vessels

36. Government Site Regulations

SACC Manual Clause A9068C (2010-01-11) Government Site Regulations

37. Scrap and Waste Material

SACC Manual Clause A9055C (2010-08-16) Scrap and Waste Material

38. Stability and Weight Management *(Not used)*

39. Vessel - Access by Canada *(Not used)*

40. Title to Property - Vessel *(Not used)*

41. Defence Contract

SACC Manual Clause A9006C (2012-07-16) Defence Contract

42. Limitation of Contractor's Liability for Damages to Canada

1. This section applies despite any other provision of the Contract and replaces the section of the general conditions entitled "Liability". Any reference in this section to damages caused by the Contractor also includes damages caused by its employees, as well as its subcontractors, agents, and representatives, and any of their employees.
2. Whether the claim is based in contract, tort, or another cause of action, the Contractor's liability for all damages suffered by Canada caused by the Contractor's performance of or failure to perform the Contract is limited to \$10 million per incident or occurrence to an annual aggregate of \$20 million for losses or damage caused in any one year of carrying out the Contract, each year starting on the date of coming into force of the Contract or its anniversary. This limitation of the Contractor's liability does not apply to nor include:
 - (a) Any infringement of intellectual property rights;
 - (b) Any breach of warranty obligations;
 - (c) Any liability of Canada to a third party arising from any act or omission of the Contractor in performing the Contract; or
 - (d) Any loss for which the policies of insurance specified in the Contract or any other policies of insurance held by the Contractor would provide insurance coverage.
3. Each Party agrees that it is fully liable for any damages that it causes to any third party in connection with the Contract, regardless of whether the third party makes its claim against Canada or the Contractor. If Canada is required, as a result of joint and several liability, to pay a third party in respect of damages caused by the Contractor, the Contractor must reimburse Canada for that amount.
4. The Parties agree that nothing herein is intended to limit any insurable interest of the Contractor nor to limit the amounts otherwise recoverable under any insurance policy. The Parties agree that to the extent that the insurance coverage required to be maintained by the Contractor under this Contract or any additional insurance coverage maintained by the Contractor, whichever is greater, is more than the limitations of liability described in sub article (2), the limitations provided herein are increased accordingly and the Contractor shall be liable for the higher amount to the full extent of the insurance proceeds recovered.

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5. If, at any time, the total cumulative liability of the Contractor for losses or damage suffered by Canada caused by the Contractor's performance of or failure to perform the Contract, excluding liability described under subsection 2(a), (b), (c) and (d) exceeds \$40 million, either Party may terminate the Contract by giving notice in writing to the other Party and neither Party will make any claim against the other for damages, costs, expected profits or any other such loss arising out of the termination. However, no such termination or expiry of the Contract shall reduce or terminate any of the liabilities that have accrued to the effective date of the termination but which liabilities are subject to the limitations as specified in sub-article (1) through (4) above.
 6. The date of termination pursuant to this Article, shall be the date specified by Canada in its notice to terminate, or, if the Contractor exercises the right to terminate, in a notice to the Contractor from Canada in response to the Contractor's notice to terminate. The date of termination shall be in Canada's discretion to a maximum of 12 months after service of the original notice to terminate served by either Party pursuant to sub-article 5, above.
 7. 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 sub-articles (1) through (4), above.
 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.

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ANNEX A

REQUIREMENT - SPECIFICATION

See electronic Annex.

ANNEX B

BASIS OF PAYMENT FIRM PRICE

Remark to Bidder: Annex B will form the Basis of Payment for the resulting contract and should not be filled in at annex 'I' the bid submission stage.

B1 Contract Firm Price

A)	Known Work For work as stated in Contract Clause 1a), Specified in Annex "A" and detailed in the Price per Item Sheet, Appendix 1 of Annex 1 as well as Pricing Data Sheet, Annex J, for a FIRM PRICE of:	\$ _____
B)	Applicable taxes _____ % :	\$ _____
C)	Total Firm Price :	\$ _____

B2 Unscheduled Work

Payment for Unscheduled Work:

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

Number of hours (to be negotiated) X \$ _____, being the Contractor's firm hourly charge-out labour rate which includes overhead and profit, plus net laid-down cost of materials to which will be added a mark-up of 10 percent, plus Goods and Services Tax or Harmonized Sales Tax, if applicable, calculated at 5 percent of the total cost of material and labour. The firm hourly charge-out labour rate and the material mark-up will remain firm for the term of the Contract and any subsequent amendments.

B2.1: Notwithstanding definitions or useage elsewhere in this document, or in the Bidder's Cost Management System, when negotiating *Hours* for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package. Elements of *Related Labour Costs* identified in B2.2 below, will not be negotiated, but will be included in the firm hourly Charge-out Labour Rate in accordance with paragraph B2.2

B2.2: Allowance for *Related Labour Costs* such as: Management, Direct Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Inspecting and Reporting, and Estimating will be included as *Overhead* within the *firm hourly Charge-out Labour Rate* entered in line B2 above.

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

B3 Overtime

No overtime work shall be compensated for under the Contract unless authorized in advance and in writing by the Contracting Authority. Any request for payment must be accompanied by a copy of the overtime authorization and a report containing such details as Canada may require with respect to the overtime work performed. Compensation for authorized overtime will be calculated in the following manner:

- a. For Known Work, the Contractor will be paid the original contract price plus agreed overtime hours paid at the following premium rates; or,
- b. For Unscheduled Work, the Contractor will be paid for agreed overtime hours paid at the firm hourly Charge-out Labour Rate above plus the following premium rates:

Premium for Time and one half: \$ _____ per hour; or,

Premium for Double time: \$ _____ per hour

The above premiums rates shall be calculated as follows:

Premium for time and one half:

½ (that portion of the firm Hourly Charge-out Labour Rate in B2 that is directly attributable to salary cost plus related certified fringe benefits) times 7.5% (representing profit)

Premium for double time:

The portion of the Unscheduled Work firm Charge-out Labour Rate in B2 that is directly attributable to salary cost plus related certified fringe benefits times 7.5% (representing profit)

These premiums will remain firm for the duration of the Contract, including all amendments and are subject to audit by Canada, and to retroactive adjustment if Canada discovers that the premiums have not been calculated in accordance with the formulae, above.

B4 Daily Services Fee

Not used

B5 Cost of all Services is Included in Contract Price

All charges, fees expenses and disbursements incidental to the carrying out of the Work, are included in the Contract Price for the Work, including, without limitation:

1. **Services:** Not used
2. **Docking and Undocking:** Not used
3. **Field Service Representatives/Supervisory Services:** include all costs for field service representatives/supervisory services including manufacturers' representatives, engineers, etc.

4. **Removals:** include all costs for removals necessary to carry out the Work and will be the responsibility of the Contractor whether or not they are identified in the specifications, except those removals not apparent when viewing the vessel or examining the drawings. The Contractor will also be responsible for safe storage of removed items and reinstalling them on completion of the Work. The Contractor will be responsible for renewal of components damaged during removal.
5. **Sheltering, Staging, Cranage and Transportation:** include the cost of all sheltering, staging including handrails, cranage and transportation to carry out the Work as specified.

The Contractor will be responsible for the cost of any necessary modification of these facilities to meet applicable safety regulations.

ANNEX C

INSURANCE REQUIREMENTS

C.1 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 in the annual aggregate
2. The Ship Repairer's Liability insurance must include the following:
 - (a) Additional Insured: 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 the Department of Public Works and Government Services Canada and the Canadian Coast Guard 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 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.

C.2 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 in the annual aggregate
2. The Commercial General Liability Insurance policy must include the following:
 - (a) Additional Insured: 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 Works and Government Services Canada.
 - (b) Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.

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- (c) 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.
 - (d) 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.
 - (e) 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.
 - (f) Employees and, if applicable, Volunteers must be included as Additional Insured.
 - (g) Employers' Liability: to protect the Contractor for liabilities arising in the management and administration of statutory and contractual entitlements of its employees.
 - (h) Notice of Cancellation: The Insurer agrees to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
 - (i) 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.
 - (j) Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.
 - (k) Sudden and accidental Pollution Liability (minimum 72 hours): To protect the Contractor for liabilities arising from damages caused by accidental pollution incidents.

ANNEX D

INSPECTION/QUALITY ASSURANCE/QUALITY CONTROL

D.1 Inspection and Test Plan (ITP):

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

2. Coding:

- (a) Each Inspection and Test Plan (ITP) is to be coded for identification clearly demonstrating a systematic approach similar to the following (Contractor's system should be defined in its Quality Control Plan):
 - (i) Prefixes for Inspections, Test and Trials:

Prefix "1" is a Contractor inspection, i.e. 1H-10-01, 1H-10-02;

prefix "2" is a Contractor post repair test, i.e. 2H-10-01; and

prefix "3" is a Contractor post repair trial, i.e. 3H-10-01.
 - (b) Specification items followed by assigned sequence numbers for inspection processes within each Specification Item; and
 - (c) Cross reference to a verification document number

3. Inspection and Test Plan Criteria:

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

- (a) All ITPs must be prepared by the Contractor in accordance with the above criteria, its Quality Plan, and must provide the following reference information:
 - (i) the ship's name;
 - (ii) the Specification item number;

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

4. Contractor Imposed Testing:

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

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

D.2 Conduct of Inspection

1. Inspections must be conducted in accordance with the ITP.
2. The Contractor must provide its own staff or subcontracted staff to conduct inspections, tests and trials; excepting that Technical Authority or Inspection Authority personnel may be designated in the specifications, in which case the Contractor must ensure that its own staff are provided in support of such inspection/test/trial.
3. The Contractor must ensure that the required conditions stated in the ITP prevail at the commencement of, and for the duration of, each inspection/test/trial.
4. The Contractor must ensure that personnel required for equipment operation and records taking during the inspection/test/trial are briefed and available at the start and throughout the duration of the inspection/test/trial. Tradesmen or FSRs who may be required to effect minor changes or adjustments in the installation must be available at short notice.
5. The Contractor is to coordinate the activities of all personnel taking part in each inspection/test/trial and ensure that safe conditions prevail throughout the inspection/test/trial.

D.3 Inspection Records and Reports

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

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2. The Contractor's QC representative (and the FSR when required) must sign as having witnessed the inspection, test or trial on the inspection record. The Contractor must forward originals of completed inspection records, together with completed test(s) and/or trials sheets to the Inspection Authority as they are completed.
 3. Unsatisfactory inspection/test/trial results, for which corrective action cannot be completed during the normal course of the inspection/test/trial, will require the Contractor to establish and record the cause of the unsatisfactory condition to the satisfaction of the Inspection Authority. Canada representatives may assist in identification where appropriate.
 4. Corrective action to remove cause of unsatisfactory inspections must be submitted to the Inspection Authority in writing by the Contractor, for approval before affecting such repairs and rescheduling of the unsatisfactory inspection/test/trial. Such notices must be included in the final records passed to the Inspection Authority.
 5. The Contractor must undertake rectification of defects and deficiencies in the Contractor's installation or repair as soon as practicable. The Contractor is responsible to schedule such repairs at its own risk.
 6. The Contractor must reschedule unsatisfactory inspections after any required repairs have been completed.
 7. Quality Control, Inspection and Test records that substantiate conformance to the specified requirements, including records of corrective actions, must be retained by the Contractor for three (3) years from the date of completion or termination of the Contract and must be made available to the Inspection Authority upon request.

D.4 Inspection and Trials Process

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

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

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

-
- (b) The Inspection Authority will inspect the materials, equipment and work throughout the project against the provisions of the Technical Specification and, where non-conformances are noted, will issue appropriate **INSPECTION NON-CONFORMANCE REPORTS**.
 - (c) The Contract requires the implementation of a Quality Assurance/Quality Control system, so the Inspection authority must require that the Contractor provide a copy of its internal inspection report pertaining to a work item before conducting the requested inspection. If third party inspections are required by the Contract (e.g. inspections by a certified CWB 178.2 welding inspector), the reports of these inspections must be required before the Work is inspected by the Inspection Authority.
 - (d) The QA/QC system is a requirement, so if the documentation is presented to the Inspection Authority before an inspection stating that the Work is satisfactory but the Inspection Authority finds that the Work has not been satisfactorily inspected, the Inspection Authority must issue an Inspection Non-conformance Report against the Work and another against the failure of the Contractor's QA/QC system.
 - (e) Before carrying out any inspection, the Inspection Authority must review the requirements for the Work and the acceptance and/or rejection standards to be applied. Where more than one standard or requirement is called up and they are potentially conflicting, the Inspection Authority must refer to the order of precedence in the Contract to determine the standard or requirement to be applied.
3. Inspection Non-conformance report
- (a) An Inspection Non-conformance report will be issued for each non-conformance noted by the Inspection Authority. Each report will be uniquely numbered for reference purposes, will be signed and dated by the Inspection Authority, and will describe the non-conformance.
 - (b) When the non-conformance has been corrected by the Contractor and has been re-inspected and accepted by the Inspection Authority, the Inspection Authority will complete the Report by adding an applicable signed and dated notation.
 - (c) At the end of the project, the content of all Inspection Non-conformance Reports which have not been signed-off by the Inspection Authority will be transferred to the Acceptance Documents before the Inspection Authority's certification of such documents.
4. Tests, Trials, and Demonstrations
- (a) To enable the Inspection Authority to certify that the Work has been performed satisfactorily, in accordance with the Contract and Specifications, the Contractor must schedule, co-ordinate, perform, and record all specified Tests, Trials and Demonstrations required by the Inspection Authority.
 - (b) Where the Specifications contain a specific performance requirement for any component, equipment, sub-system or system, the Contractor must test such component, equipment, sub-system or system to the satisfaction of the Inspection Authority, to prove that the specified performance has been achieved and that the component, equipment, sub-system or system performs as required by the specifications.
 - (c) Tests, trials and demonstrations must be conducted in accordance with a logical, systematic schedule which must ensure that all associated components and equipment are proven before sub-systems demonstration or testing, and that sub-systems are proven before system demonstration or testing.

- (d) Where the Specifications do not contain specific performance requirements for any component, equipment, sub-system or system, the Contractor must demonstrate such component, equipment, sub-system or system to the satisfaction of the Inspection Authority.
- (e) The contractor must submit its Test and Inspection Plan as indicated in section D.1 above.
- (f) The Contractor must co-ordinate each test, trial and demonstration with all interested parties, including the Inspection Authority; Contracting and Technical Authorities; regulatory authorities; Classification Society; Sub-contractors; etc. The Contractor must provide the Inspection Authority and other Crown Authorities with a minimum of five working days' notice of each scheduled test, trial, or demonstration.
- (g) The Contractor must keep written records of all tests, trials, and demonstrations conducted.
- (h) The Contractor must in all respects be responsible for the conduct of all tests and trials in accordance with the requirements of the Contract.
- (i) The Inspection Authority and the Technical Authority reserve the right to defer starting or continuing with any sea trials for any reasonable cause including but not limited to adverse weather, visibility, equipment failure or degradation, lack of qualified personnel and inadequate compliance with safety standards.

ANNEX E

WARRANTY

2030 (2014-09-25) General Conditions Higher Complexity Goods are hereby amended, by deleting section 2030 22(2014-09-25), Warranty and replacing it as follows:

E.1 Section 22 Warranty

1. At the discretion of the Minister, the Contractor will replace or make good at its own expense any finished work, excluding Government Issue incorporated therein, which becomes defective or which fails to conform to contract requirements as a result of faulty or inefficient manufacture, material or workmanship.
2. Notwithstanding prior acceptance of the finished work, and without restricting any other term of the Contract or any condition, warranty or provision implied or imposed by law, the Contractor hereby warrants that the following shall be free from all defects and shall conform with the requirements of the contract:

- (a) The painting of the underwater portion of the hull for a period of three hundred and sixty-five (365) days commencing from the date of undocking, except that the Contractor will only be liable to repair and/or replace to a value to be determined as follows:

Original cost to Canada of the underwater painting Work, divided by three hundred and sixty-five (365) days and multiplied by the number of days remaining in the warranty period. The resultant would represent the "Dollar Credit" due to Canada from the Contractor.

- (b) All other painting Work for a period of three hundred and sixty-five (365) days commencing from the date of acceptance of the Work;
 - (c) all parts and material provided by the Contractor for a period of three hundred and sixty-five (365) days commencing from the date of acceptance of such parts or material;
 - (d) All other items of Work for a period of ninety (90) days commencing from the date of acceptance of the Work, except that:
 - (i) the warranty on the Work related to any system or equipment not immediately placed in continuous use or service shall extend for a period of ninety (90) days from the date of acceptance of the vessel;
 - ii) for all outstanding defects, deviations, and Work items listed on the Acceptance Document at Delivery, the Warranty will be ninety (90) days from the subsequent date of acceptance for each item.
3. If more than one warranty period applies, in accordance with the above, to any Work, then the warranty shall be for the longest period.
4. The Contractor agrees to pass to Canada, and exercise on behalf of Canada, all warranties on the Materials supplied or held by the Contractor which exceed the periods indicated Above.

E.2 Warranty Procedures

E2.1 Scope

- (a) The following are the procedures which suit the particular requirements for warranty considerations for a vessel on completion of a refit.

E2.2 Definition

- (a) There are a number of definitions of "warranty" most of which are intended to describe its force and effect in law. One such definition is offered as follows:

"A warranty is an agreement whereby the vendor's or manufacturer's responsibility for performance of its product is extended for a specific period of time beyond the date at which the title to the product passes to the buyer."

E2.3 Warranty Conditions

- (a) General Conditions 2030, Higher Complexity - Goods are augmented by clauses incorporated into the subject Contract.
- (b) The warranty periods may be stated in more than one part.
 - (i) 90 days commencing from the day the PWGSC 1205 Acceptance Document is signed for workmanship provided by the contractor for the refit work specified;
 - (ii) 365 days from the date of undocking the vessel for the specified areas of underwater paint and topside painting;
 - (iii) 365 days commencing from the day the PWGSC 1205 Acceptance Document is signed for parts and material provided by the contractor for the refit work specified;
 - (iv) Any other specific warranty periods that may be required in the contract or offered by the Contractor.
- (c) The foregoing does not cover the disposition of other deficiencies that will be directly related to Technical Authority problem areas of the following nature:
 - (i) items becoming unserviceable that were not included in the refit specification;
 - (ii) refit specifications or other related documentation requiring amendments or corrections to increase viability; and
 - (iii) work performed that is directly related to the Technical Authority.

E2.4 Reporting Failures With Warranty Potential

- (a) The initial purpose of a report of a failure is to facilitate the decision as to whether or not to involve warranty and to generate action to effect repairs. Therefore in addition to identification, location data, etc. the report must contain details of the defect. Warranty decisions as a general rule are to be made locally and the administrative process is to be in accordance with procedures as indicated.
- (b) These procedures are necessary as invoking a warranty does not simply mean that the warrantor will automatically proceed with repairs at his expense. A review of the defect may well result in a disclaimer of responsibility, therefore, it is imperative that during such a review the Department is directly represented by competent technical authority qualified to agree or disagree with the warrantor's assertions.

E2.5 Procedures

- (a) Immediately it becomes known to the Ship's Staff that an equipment/system is performing below accepted standards or has become defective, the procedures for the investigation and reporting are as follows:
 - (i) The vessel advises the Technical Authority when a defect, which is considered to be directly associated the refit work, has occurred.
 - (ii) On review of the Specification and the Acceptance Document, the Technical Authority in consort with Ship's Staff is to complete the Tombstone Data and section 1 of the Warranty Claim Form and forward the original to the Contractor for review with a copy to the PWGSC Contracting Authority. If the PWGSC Contracting or Inspection Authority is unable to support warranty action, the Defect Claim Form will be returned to the originator with a brief justification. (It is to be noted that in the latter instance PWGSC will inform the Contractor of its decision and no further action will be required of the Contractor.

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

- (iii) Assuming the Contractor accepts full responsibility for repair, the Contractor completes Section 2 and 3 of the Warranty Claim Form, returns it to the Inspection Authority who confirms corrective action has been completed, and who then distributes the form to the Technical Authority and the PWGSC Contracting Authority.
- (b) In the event that the Contractor disputes the claim as a warranty defect, or agrees to share, the contractor is to complete Part 2 of the Warranty Claim Form with the appropriate information and forward it to the Contracting Authority who will distribute copies as necessary.
- (c) When a warranty defect claim is disputed by the Contractor, the Technical Authority may arrange to correct the defect by in-house resources or by contracting the work out. All associated costs must be tracked and recorded as a possible charge against the contractor by PWGSC action. Material costs and man-hours expended in correcting the defect are to be recorded and entered in Section 5 of the warranty defect claim by the Technical Authority who will forward the warranty defect claim to the PWGSC Contracting Authority for action. Defective parts of equipment are to be retained pending settlement of claim.
- (d) Defective equipment associated with potential warranty should not normally be dismantled until the contractor's representative has had the opportunity to observe the defect. The necessary work is to be undertaken through normal repair methods and costs must be segregated as a possible charge against a contractor by PWGSC action.

E2.6 Liability

- (a) Agreement between the Contracting Authority, Inspection Authority, Technical Authority and the Contractor will result in one of the following conditions:
 - (i) The contractor accepts full responsibility for costs to repair or overhaul under the warranty provisions of the contract;
 - (ii) The Technical Authority accepts full responsibility for repair and overhaul of item concerned; or
 - (iii) The Contractor and the Technical Authority agree to share responsibility for the costs to repair or overhaul the unserviceable item, in such cases the PWGSC Contracting Authority will negotiate the best possible sharing arrangement.
- (b) In the event of a disagreement as in paragraph 5c, PWGSC will take necessary action with the contractor while the Technical Authority informs its Senior Management including pertinent data and recommendations.
- (c) The total cost of processing warranty claims must include accommodation and travel costs of the contractor's employees as well as equipment/system down time and operational constraints. Accordingly, the cost to remediate the defect, in man-hours and material, will be discussed between the Contracting/Inspection Authorities and the Technical Authority to determine the best course of action.

E2.7 Alongside Period For Warranty Repairs and Checks

- (a) If at all possible, an alongside period for the vessel is to be arranged just before the expiration of the 90 day warranty period. This alongside period is to provide time for warranty repair and check by the contractor.
- (b) In respect to the underwater paint, should it become defective during the associated warranty period the contractor is only liable to repair to a value determined as follows:

"Original cost to Canada for painting and preservation of the underwater section of the hull, divided by three hundred and sixty-five (365) days and multiplied by the number of days remaining in the three hundred and sixty-five (365) days day warranty period. The resultant would represent the 'Dollar Credit' due to Canada from the Contractor."

- (c) The Underwater paint system, before expiration of the warranty, should be checked by divers. The Technical Authority, is to arrange the inspection and inform the Contracting Authority of any adverse results.

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Appendix 1 of Annexe E



Public Works and Government
Services Canada

Travaux publics et Services
gouvernementaux Canada

Warranty Claim Réclamation De Garantie

Vessel Name – Nom de navire	File No. – N° de dossier	Contract No. - N ° de contrat
Customer Department – Ministère client		Warranty Claim Serial No. Numéro de série de réclamation de garantie
Contractor – Entrepreneur		<u>Effect on Vessel Operations</u> <u>Effet sur des opérations de navire</u> Critical Degraded Operational Non-operational Critique Dégradé Opérationnel Non-opérationnel

1. Description of Complaint – Description de plainte

Contact Information – l'information de contact

Name – Nom

Tel. No. - N ° Tél

Signature – Signature

Date

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

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

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

Date of Corrective Action - Date de modalité de reprise

Client Name and Signature - Nom et signature de client

Date

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

Signature – Signature

Date

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ANNEX F

VESSEL CUSTODY

(NOT USED)

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Annex G

SECURITY REQUIREMENTS CHECK LIST

(NOT USED)

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ANNEX H

PROJECT MANAGEMENT SERVICES

(NOT USED)

ANNEX I

FINANCIAL BID PRESENTATION SHEET

I1 Price for Evaluation

A)	Known Work For work as stated in Part 1 Clause 2a, Specified in Annex "A" and detailed in the Price per Item Sheet, Appendix 1 of this Annex, for a FIRM PRICE of:	
		\$
B)	Unscheduled Work Contractor <i>Labour Cost</i> : Estimated labour hours at a firm <i>hourly Charge-out Labour Rate</i> , including overhead and profit for evaluation purpose only: 850 person hours X \$_____ per hour for a PRICE of: See Note I2.1 and I2.2 below.	
		\$
C)	EVALUATION PRICE GST Excluded, [A + B]: For an EVALUATION PRICE of :	\$

I2 Unscheduled Work

The Contractor will be paid for unscheduled work arising, as authorized by the Minister, calculated in the following manner:

"Number of hours (to be negotiated) X \$_____ your firm hourly *Charge-out Labour Rate* which includes *Overhead* and profit, plus net laid-down cost of materials to which shall be added a 10% mark-up, plus Goods and Services Tax or Harmonized Sales Tax as applicable, of the total cost of material and labour. The firm hourly *Charge-out Labour Rate* and the material mark-up will remain firm for the duration of the Contract and any subsequent amendments thereto."

I2.1: Notwithstanding definitions or useage elsewhere in this document, or in the Bidder's Cost Management System, when negotiating *Hours* for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package.

Elements of Related Labour Costs identified in I2.2 below, will not be negotiated, but will be compensated for in accordance with paragraph I2.2. It is therefore incumbent upon the Bidder to enter values in the above table which will result in fair compensation, regardless of the structure of their Cost Management System.

I2.2: Allowance for *Related Labour Costs* such as: Management, Direct Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Inspecting and Reporting, and Estimating will be included as *Overhead* for the purposes of determining the *Charge-out Labour Rate* entered in line I2 above.

I2.3: The 10% mark-up rate for materials will also apply to subcontracted costs. The mark-up rate includes any allowance for material and subcontract management not allowed for in the *Chargeout Labour Rate*. The Contractor will not be entitled to a separate labour component for the purchase and handling of materials or subcontract administration.

I3 Overtime

No overtime work shall be compensated for under the Contract unless authorized in advance and in writing by the Contracting Authority. Any request for payment must be accompanied by a copy of the overtime authorization and a report containing such details as Canada may require with respect to the overtime work performed. Compensation for authorized overtime will be calculated in the following manner:

- a. For Known Work, the Contractor will be paid the original contract price plus agreed overtime hours paid at the following premium rates; or,
- b. For Unscheduled Work, the Contractor will be paid for agreed overtime hours paid at the firm hourly Charge-out Labour Rate above plus the following premium rates:

Premium for Time and one half: \$ _____ per hour; or,

Premium for Double time: \$ _____ per hour

The above premiums rates shall be calculated as follows:

Premium for time and one half:

½ (that portion of the firm Hourly Charge-out Labour Rate in I2 that is directly attributable to salary cost plus related certified fringe benefits) times 7.5% (representing profit)

Premium for double time:

The portion of the Unscheduled Work firm Charge-out Labour Rate in I2 that is directly attributable to salary cost plus related certified fringe benefits times 7.5% (representing profit)

These premiums will remain firm for the duration of the Contract, including all amendments and are subject to audit by Canada, and to retroactive adjustment if Canada discovers that the premiums have not been calculated in accordance with the formulae, above.

I4 Daily Services Fee

Not used

I5 Cost of all Services is Included in Contract Price

All charges, fees expenses and disbursements incidental to the carrying out of the Work, are included in the Evaluation Price for the Work, including, without limitation:

1. **Services:** Not used
2. **Docking and Undocking:** Not used
3. **Field Service Representatives/Supervisory Services:** include all costs for field service representatives/supervisory services including manufacturers' representatives, engineers, etc.

4. **Removals:** include all costs for removals necessary to carry out the Work and will be the responsibility of the Contractor whether or not they are identified in the specifications, except those removals not apparent when viewing the vessel or examining the drawings. The successful Bidder will also be responsible for safe storage of removed items and reinstalling them on completion of the Work. The successful Bidder will be responsible for renewal of components damaged during removal.

5. **Sheltering, Staging, Cranage and Transportation:** include the cost of all sheltering, staging including handrails, cranage and transportation to carry out the Work as specified.

The successful Bidder will be responsible for the cost of any necessary modification of these facilities to meet applicable safety regulations.

I6 Vessel Transfer Costs

Not used

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APPENDIX 1 OF ANNEX I

Scheduled Work:

PRICE PER ITEM SHEETS		
Item	Description – A) SCHEDULED WORK	Firm Price
1 to 4	General remarks	\$ _____
4.10	C.C.G.S. LEIM – Safety and Security Equipment	\$ _____
4.11	C.C.G.S. LEIM – Hull and Related Structure	\$ _____
4.15	C.C.G.S. LEIM – Auxiliary Systems	\$ _____
4.16	C.C.G.S. LEIM – Domestic Systems	\$ _____
5.10	C.C.G.S. ILE ST OURS – Safety and Security Equipment	\$ _____
5.11	C.C.G.S. ILE ST OURS – Hull and Related Structure	\$ _____
5.12	C.C.G.S. ILE ST OURS – Propulsion and Manoeuvring Systems	\$ _____
5.13	C.C.G.S. ILE ST OURS – Vessel's Generation of Electrical Power	\$ _____
5.14	C.C.G.S. ILE ST OURS – Power Distribution	\$ _____
5.15	C.C.G.S. ILE ST OURS – Auxiliary Systems	\$ _____
5.16	C.C.G.S. ILE ST OURS – Domestic Systems	\$ _____
6.10	C.C.G.S. GARDE-CÔTE 03 – Safety and Security Equipment	\$ _____
6.11	C.C.G.S. GARDE-CÔTE 03 – Hull and Related Structure	\$ _____
6.12	C.C.G.S. GARDE-CÔTE 03 – Propulsion and Manoeuvring Systems	\$ _____
6.14	C.C.G.S. GARDE-CÔTE 03 – Power Distribution	\$ _____
6.15	C.C.G.S. GARDE-CÔTE 03 – Auxiliary Systems	\$ _____
6.17	C.C.G.S. GARDE-CÔTE 03 – Deck Equipment – Ship's Support Systems	\$ _____
7.10	C.C.G.S. FCG SMITH – Safety and Security Equipment	\$ _____
7.11	C.C.G.S. FCG SMITH – Hull and Related Structure	\$ _____
7.14	C.C.G.S. FCG SMITH – Power Distribution	\$ _____
7.16	C.C.G.S. FCG SMITH – Domestic Systems	\$ _____
A) SCHEDULED WORK - TOTAL FIRM PRICE		\$ _____

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Optionnal Work:

PRICE PER ITEM SHEETS		
Item	Description – B) OPTIONAL WORK	Firm Price
4.10, 5.10, 6.10 & 7.10	C.C.G.S. LEIM – Safety and Security Equipment	\$ _____
4.15	C.C.G.S. LEIM – Auxiliary Systems	\$ _____
5.12	C.C.G.S. ILE ST OURS – Propulsion and Manoeuvring Systems	\$ _____
B) OPTIONAL WORK - TOTAL FIRM PRICE		\$ _____

Note: PWGSC reserves the right to exercise all the options or partial options.

The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described at Annex A of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment. The Contracting Authority may exercise the option within **5 days** after beginning of work by sending a written notice to the Contractor.

PRICING PER ITEM SHEET SUMMARY		
TOTAL (A) SCHEDULED WORK	TOTAL (B) OPTIONAL WORK	TOTAL KNOWN WORK FIRM PRICE ((A) + (B))
\$ _____	\$ _____	\$ _____

Remark to Bidders:

Canada may reject the bid if any of the prices submitted do not reasonably reflect the cost of performing the part of the work to which that price applies.

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ANNEX J

PRICING DATA SHEETS		
Item	Description – A) SCHEDULED WORK	Firm Price
1	General Remarks (Bidders can enter \$0.00 or indicate 'included' if the fees for this item are distributed in each of the items below. In case the fees are not distributed an amount must be indicated in the price box.)	\$
4	CCGS LEIM	
4.10	Safety and Security Equipment (Overheads fees related to this item must be distributed in each sub items.)	
	4.10.1 Portable fire extinguishers Provide a price for known extinguishers (based due dates provided in the list). Unit prices for additional extinguishers are to be included in section B) Optional Work. <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 4.10.1 : \$ _____</div>	
	4.10.2 Fire detection system <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 4.10.2 : \$ _____</div>	
	4.10.3 Annual inspection of fixed fire suppression system Provide a price for known extinguishers (based due dates provided in the list). Unit prices for additional extinguishers are to be included in section B) Optional Work. <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 4.10.3 : \$ _____</div>	
	4.10.4 Defective Level Sensors <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 4.10.4 : \$ _____</div>	
	Total for 4.10 : \$ _____	

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PRICING DATA SHEETS

Item	Description – A) SCHEDULED WORK	Firm Price
4.11	Hull and Related Structure (Overheads fees related to this item must be distributed in each sub items.)	
	4.11.1 Ceiling tiles replacement laundry room	
	<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Total for item 4.11.1 : \$ _____	
4.11.2	Repair emergency exit covers	
	<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Total for item 4.11.2 : \$ _____	
	4.11.3	
<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>		
Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>		
Total for item 4.11.3 : \$ _____		
Total for 4.11 : \$ _____		
4.15	Auxiliary Systems (Overheads fees related to this item must be distributed in each sub items.)	
	4.15.1 Revision of bilge/ballast, fire/general pumps	
	<div style="text-align: right;">Mobilisation / Demobilisation = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
4.15.1	Subcontracting (if applicable) <div style="text-align: right;">Mobilisation / Demobilisation = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Total for item 4.15.1 : \$ _____	
Total for 4.15 : \$ _____		

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PRICING DATA SHEETS		
Item	Description – A) SCHEDULED WORK	Firm Price
4.16	Domestic Systems (Overheads fees related to this item must be distributed in each sub items.)	
	4.16.1 Cleaning and inspection of central ventilation systems	
	<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Total for item 4.16.1 : \$ _____	
	Total for 4.16 :	\$ _____
ITEM 4 – TOTAL FIRM PRICE FOR THE CCGS LEIM =		\$ _____

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PRICING DATA SHEETS		
Item	Description – A) SCHEDULED WORK	Firm Price
5	CCGS ILE SAINT OURS	
5.10	<p>Safety and Security Equipment (Overheads fees related to this item must be distributed in each sub items.)</p> <p>5.10.1 Certification of portable fire extinguishers Provide a price for known extinguishers (based due dates provided in the list). Unit prices for additional extinguishers are to be included in section B) Optional Work.</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Subcontracting (if applicable)</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;">Total for item 5.10.1 : \$ _____</p> <p>5.10.2 Annual inspection of fixed fire suppression system Provide a price for known extinguishers (based due dates provided in the list). Unit prices for additional extinguishers are to be included in section B) Optional Work.</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Subcontracting (if applicable)</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;">Total for item 5.10.2 : \$ _____</p> <p style="text-align: right;">Total for 5.10 : \$ _____</p>	
5.11	<p>Hull and Related Structure (Overheads fees related to this item must be distributed in each sub items.)</p> <p>5.11.1 Drain installation starboard upper deck</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Subcontracting (if applicable)</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;">Total for item 5.11.1: \$ _____</p> <p>5.11.1 Repair four wheelhouse windows</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Subcontracting (if applicable)</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;">Total for item 5.11.1: \$ _____</p> <p style="text-align: right;">Total for 5.11 : \$ _____</p>	

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PRICING DATA SHEETS				
Item	Description – A) SCHEDULED WORK	Firm Price		
5.12	Propulsion and Manoeuvring System (Overheads fees related to this item must be distributed in each sub items.)			
	5.12.1 Complete (7-year) inspection starboard diesel propulsion engine & revision of transmissions. (Excluding optional work)			
	<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>			
	Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>			
	Total for item 5.12.1 : \$ _____			
5.12.2 Annual maintenance starboard main engine	<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>			
	Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>			
	Total for item 5.12.2 : \$ _____			
	5.12.3 Manoeuvring system			
	<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>			
5.12.3 Manoeuvring system	Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>			
	Total for item 5.12.3 : \$ _____			
	Total for 5.12 : \$ _____			
	5.13		Vessel's Generation of Electrical Power (Overheads fees related to this item must be distributed in each sub items.)	
			5.13.1 Complete (8-year) inspection port generator diesel engine & revision of transmissions	
<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>				
Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>				
Total for item 5.13.1 : \$ _____				
5.13.2 Annual maintenance starboard generator diesel engine	<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>			
	Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>			
	Total for item 5.13.2 : \$ _____			
	Total for 5.13 : \$ _____			

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Item	Description – A) SCHEDULED WORK	Firm Price
5.14	Power Distribution (Overheads fees related to this item must be distributed in each sub items.)	
	5.14.1 Electric isolation test	
	<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Subcontracting (if applicable)</div> <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 5.14.1 : \$ _____</div>	
	Total for 5.14 :	
5.15	Auxiliary Systems (Overheads fees related to this item must be distributed in each sub items.)	
	5.15.1 Annual maintenance of the hydraulic unit engine	
	<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Subcontracting (if applicable)</div> <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 5.15.1 : \$ _____</div>	
	5.15.2 Installation of cooler on the hydraulic unit oil system	
	<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Subcontracting (if applicable)</div> <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 5.15.2 : \$ _____</div>	
	5.15.3 Starboard aft air compressor	
	<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Subcontracting (if applicable)</div> <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 5.15.3 : \$ _____</div>	
	Total for 5.15 :	

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Item	Description – A) SCHEDULED WORK	Firm Price
5.16	Domestic Systems (Overheads fees related to this item must be distributed in each sub items.)	
	5.16.1 Cleaning and inspection of central ventilation system	
	<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Total for item 5.16.1 : \$ _____	
	5.16.2 Replacement of ship's air conditioning system	
	<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Total for item 5.16.2 : \$ _____	
	Total for 5.16 : \$ _____	
ITEM 5 – TOTAL FIRM PRICE FOR THE CCGS ILOE SAINT OURS = \$ _____		

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PRICING DATA SHEETS		
Item	Description – A) SCHEDULED WORK	Firm Price
6	CCGS GARDE-CÔTE 03	
6.10	<p>Safety and Security Equipment (Overheads fees related to this item must be distributed in each sub items.)</p> <p>6.10.1 Portable fire extinguishers Provide a price for known extinguishers (based due dates provided in the list). Unit prices for additional extinguishers are to be included in section B) Optional Work.</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Subcontracting (if applicable)</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;">Total for item 6.10.1 : \$ _____</p> <p>6.10.2 Fire detection system</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Subcontracting (if applicable)</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;">Total for item 6.10.2 : \$ _____</p> <p>6.10.3 Annual inspection of fixed fire suppression system Provide a price for known extinguishers (based due dates provided in the list). Unit prices for additional extinguishers are to be included in section B) Optional Work.</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Subcontracting (if applicable)</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;">Total for item 6.10.3 : \$ _____</p> <p style="text-align: right;">Total for 6.10 : \$ _____</p>	
6.11	<p>Hull and Related Structure (Overheads fees related to this item must be distributed in each sub items.)</p> <p>6.11.1 Commissioning of engine room air conduit</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Subcontracting (if applicable)</p> <p style="text-align: right;">Mobilization / Demobilization = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;">Total for item 6.11.1 : \$ _____</p>	

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Item	Description – A) SCHEDULED WORK	Firm Price
	6.11.2 Welding water pipe support brackets <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 6.11.2 : \$ _____</div>	
	6.11.3 Repair of fuel tanks <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 6.11.3 : \$ _____</div>	
	6.11.4 Repair cover access port galley and starboard washroom <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 6.11.4 : \$ _____</div>	
	6.11.5 Floor replacement port galley and starboard washroom <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 6.11.5 : \$ _____</div>	
	6.11.6 Steel plate replacement under the winch <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 6.11.6 : \$ _____</div>	

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PRICING DATA SHEETS			
Item	Description – A) SCHEDULED WORK		Firm Price
	6.11.7 Cleats replacement and fender repairs <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 6.11.7 : \$ _____</div>		
	Total for 6.11 :		\$ _____
6.12	Propulsion and Manoeuvring Systems (Overheads fees related to this item must be distributed in each sub items.)		
	6.12.1 5-year maintenance port diesel propulsion engine <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 6.12.1 : \$ _____</div>		
	6.12.2 Hydraulic engine and pump of the port manoeuvring system <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 6.12.2 : \$ _____</div>		
	Total for 6.12:		\$ _____
6.14	Power Distribution (Overheads fees related to this item must be distributed in each sub items.)		
	6.14.1 Electric isolation test <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 6.14.1 : \$ _____</div>		
	Total for 6.14 :		\$ _____

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PRICING DATA SHEETS		
Item	Description – A) SCHEDULED WORK	Firm Price
6.15	Auxiliary Systems (Overheads fees related to this item must be distributed in each sub items.)	
	6.15.1 Port electric bilge pump	
	<div>Mobilization / Demobilization = \$ _____</div> <div>Materials, equipment and consumables = \$ _____</div> <div>Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div>Subcontracting (if applicable)</div> <div>Mobilization / Demobilization = \$ _____</div> <div>Materials, equipment and consumables = \$ _____</div> <div>Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Total for item 6.15.1 : \$ _____	
	6.15.2 Starboard electric bilge pump	
6.17	Deck Equipment / Ship's support systems (Overheads fees related to this item must be distributed in each sub items.)	
	6.17.1 Repair oil leak port capstan	
	<div>Mobilization / Demobilization = \$ _____</div> <div>Materials, equipment and consumables = \$ _____</div> <div>Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div>Subcontracting (if applicable)</div> <div>Mobilization / Demobilization = \$ _____</div> <div>Materials, equipment and consumables = \$ _____</div> <div>Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Total for item 6.17.1 : \$ _____	
	6.17.2 5-year inspection of the winch	
	<div>Mobilization / Demobilization = \$ _____</div> <div>Materials, equipment and consumables = \$ _____</div> <div>Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div>Subcontracting (if applicable)</div> <div>Mobilization / Demobilization = \$ _____</div> <div>Materials, equipment and consumables = \$ _____</div> <div>Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Total for item 6.17.2 : \$ _____	
	Total for 6.15 : \$ _____	
	Total for 6.17 : \$ _____	
	ITEM 6 – TOTAL FIRM PRICE FOR THE CCGS GARDE COTE 03 = \$ _____	

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PRICING DATA SHEETS		
Item	Description – A) SCHEDULED WORK	Firm Price
7	CCGS FCG SMITH	
7.10	<p>Safety and Security Equipment (Overheads fees related to this item must be distributed in each sub items.)</p> <p>7.10.1 Fire extinguisher and Galley fixed fire suppression system certification</p> <p>Provide a price for known extinguishers (based due dates provided in the list). Unit prices for additional extinguishers are to be included in section B) Optional Work.</p> <p>Mobilization / Demobilization = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Subcontracting (if applicable)</p> <p>Mobilization / Demobilization = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Total pour article 7.10.1 : \$ _____</p> <p>7.10.2 Annual inspection of fixed fire suppression system</p> <p>Provide a price for known extinguishers (based due dates provided in the list). Unit prices for additional extinguishers are to be included in section B) Optional Work.</p> <p>Mobilization / Demobilization = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Subcontracting (if applicable)</p> <p>Mobilization / Demobilization = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Total for item 7.10.2 : \$ _____</p> <p>7.10.3 Fire detection system</p> <p>Mobilization / Demobilization = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Subcontracting (if applicable)</p> <p>Mobilization / Demobilization = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Total for item 7.10.3 : \$ _____</p>	

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PRICING DATA SHEETS			
Item	Description – A) SCHEDULED WORK	Firm Price	
	7.10.4 Five-year inspection of the lifeboat davit <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 7.10.4 : \$ _____</div>		
	7.10.5 Installation of return pipes on both cranes <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 7.10.5 : \$ _____</div>		
	Total pour 7.10 : \$ _____		
7.11	Hull and Related Structure (Overheads fees related to this item must be distributed in each sub items.)		
	7.11.1 Replace wheelhouse windows <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 7.11.1 : \$ _____</div>		
	Total pour 7.11 : \$ _____		
7.14	Power Distribution (Overheads fees related to this item must be distributed in each sub items.)		
	7.14.1 Electric isolation test <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div> <div style="text-align: right;">Total for item 7.14.1 : \$ _____</div>		
	Total for 7.14 : \$ _____		

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PRICING DATA SHEETS		
Item	Description – A) SCHEDULED WORK	Firm Price
7.16	Domestic Systems (Overheads fees related to this item must be distributed in each sub items.)	
	7.16.1 Cleaning and inspection of central ventilation system	
	<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Total for item 7.16.1 \$ _____	
	7.16.2 Potable water tanks	
	<div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Subcontracting (if applicable) <div style="text-align: right;">Mobilization / Demobilization = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Total for item 7.16.2 \$ _____	
	Total for 7.16 : \$ _____	
ITEM 7 – TOTAL FIRM PRICE FOR THE CCGS FCG SMITH =		\$ _____
A) TOTAL SCHEDULED WORK – FIRM PRICE		\$ _____

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Optional Work:

PRICING DATA SHEETS		
Item	Description – B) OPTIONAL WORK	Firm Price
4, 5, 6 & 7	CCGS LEIM, CCGS ILE SAINT OURS, CCGS GARDE-COTE 03 & CCGS FCG SMITH	
4.10, 5.10, 6.10 & 7.10	<p>Safety and Security Equipment (Overheads fees related to this item must be distributed in each sub items.)</p> <p>Inspection of Fire extinguisher and fixed fire suppression systems – Refilling of cylinders and additional hydrostatic tests. (Price for quantities from 1 to 5 each – Final amount to be prorated)</p> <p><u>Refilling of extinguishers</u> extinguishers 2.75 lbs ABC; _____ \$ X 5 extinguishers = _____ \$ extinguishers 5 lbs ABC; _____ \$ X 5 extinguishers = _____ \$ extinguishers 10 lbs ABC; _____ \$ X 5 extinguishers = _____ \$ extinguishers 20 lbs ABC; _____ \$ X 5 extinguishers = _____ \$ extinguishers 20 lbs BC; _____ \$ X 5 extinguishers = _____ \$ extinguishers 5 lbs CO₂; _____ \$ X 5 extinguishers = _____ \$ extinguishers 10 lbs CO₂; _____ \$ X 5 extinguishers = _____ \$ extinguishers 15 lbs CO₂; _____ \$ X 5 extinguishers = _____ \$ extinguishers 20 lbs CO₂; _____ \$ X 5 extinguishers = _____ \$ extinguishers 6 litres of foam type K; _____ \$ X 5 extinguishers = _____ \$</p> <p><u>Hydrostatic tests</u> on cylinder 9.2.1 AFFF; _____ \$ X 5 tests = _____ \$ low pressure on cylinders powder 2.5 to 30 lbs; _____ \$ X 5 tests = _____ \$ High pressure on cylinder CO₂; _____ \$ X 5 tests = _____ \$ on cylinders foam type K; _____ \$ X 5 tests = _____ \$</p> <p style="text-align: right;">Total for this item: \$ _____</p> <p>Annual inspection of fixed fire suppression system – Refilling of cylinders and additional hydrostatic tests. (Price for quantities from 1 to 5 each – Final amount to be prorated)</p> <p><u>Refilling of cylinder</u> cylinder CO₂ 100 lbs ; _____ \$ X 5 cylinders = _____ \$ cylinder CO₂ 75 lbs _____ \$ X 5 cylinders = _____ \$ cylinder CO₂ 50 lbs _____ \$ X 5 cylinders = _____ \$ cylinder CO₂ 15 lbs _____ \$ X 5 cylinders = _____ \$ cylinder CO₂ 10 lbs _____ \$ X 5 cylinders = _____ \$</p> <p><u>Hydrostatic tests</u> Flexible hoses hydrostatic tests; _____ \$ X 5 hoses = _____ \$ High pressure on cylinder 50-75-100 lbs CO₂; _____ \$ X 5 cylinders = _____ \$ High pressure cylinder 10-15 lbs CO₂; _____ \$ X 5 cylinders = _____ \$</p> <p style="text-align: right;">Total for this item: \$ _____</p>	
	Total for 4.10, 5.10, 6.10 & 7.10 :	\$ _____

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PRICING DATA SHEETS		
Item	Description – B) OPTIONAL WORK	Firm Price
5.12.1	Propulsion and Manoeuvring Systems (Overheads fees related to this item must be distributed in each sub items.)	
	5.12.1 Taking the port engine in and out of the ship including transport both ways with both transmissions. Including unbolting of the engine at the base, dismantling of accessories (walls, stairs), and craning	
	<div style="text-align: right;">Mobilisation / Demobilisation = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Subcontracting (if applicable) <div style="text-align: right;">Mobilisation / Demobilisation = \$ _____</div> <div style="text-align: right;">Materials, equipment and consumables = \$ _____</div> <div style="text-align: right;">Labour ; \$ _____ /hour X _____ hours = \$ _____</div>	
	Total for item 5.12.1 :	
	Total for 5.12.1 :	\$ _____
B) OPTIONAL WORK – TOTAL FIRM PRICE		\$ _____

Note: PWGSC reserves the right to exercise all the options or partial options.

The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described at Annex A of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment. The Contracting Authority may exercise the option within **5 days** after beginning of work by sending a written notice to the Contractor.

Seasonal Vessel Repairs Sorel 2016-2017

CCGS LEIM (L 023)
CCGS ÎLE SAINT-OURS (I 002)
CCGS GARDE-CÔTE 03 (C 035)
CCGS F.C.G. SMITH (F 005)

Specification no.: F3065-16IN717
Date: 2016-11-23

Prepared by: Marine Engineering
101 Champlain Blvd.
Québec, QC
G1K 7Y7

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1.0 GENERAL NOTES

1.1. IDENTIFICATION

These general notes specify CCG requirements applicable to all the following technical specifications.

1.2. REFERENCES

Applicable regulations and documentation:

Applicable documents:

Safety and Security Procedures	Title
7. A. 1	Risk prevention program
7. B. 1	Diving operation
7. B. 2	Fall protection
7. B. 3	Access to confined spaces
7. B. 4	Hot work
7. B. 5	Lock out/tag out
7. B. 6	Electrical work on live circuits
7.E.8	Use of halocarbons
10. A. 2	Contractor's safety and security
DFO-CCG	Sorel Base Safety Directives

Publications:

TP3177E	Standard for the Control of Gas Hazards in Vessels to be Repaired or Altered
TP127E	Transport Canada's Ships Electrical Standards
IEEE 45	Recommended Practice for Electrical Installations on Shipboard
CSA W47.1	Certification of Companies for Fusion Welding of Steel, Section 2 (Certification)
CSA W47.2	Certification of Companies for Fusion Welding of Aluminum
CSA W59	Welded Steel Construction (Metal Arc Welding)
CSA W59.2	Welded Aluminum Construction
EPS Report 1/RA/2	Environmental Code of Practice for the Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems
NFPA 10	Standard for portable fire extinguishers
DFO/5737	Fleet Safety and Security Manual

Acts and regulations:

S.C. 2001, c. 26	<i>Canada Shipping Act</i> and applicable regulations
R.S.C. (1985), ch. L-2	Canada Labour Code
SOR /2003-289	Federal Halocarbon Regulations

1.3. OCCUPATIONAL HEALTH AND SAFETY

The Contractor and all subcontractors must follow occupational health and safety (OHS) procedures in accordance with federal and provincial OHS regulations to ensure that the activities of the Contractor are conducted safely and without compromising the safety of any staff members.

The Contractor and the Contractor's employees, including all subcontractors, must attend an orientation session on vessel safety before beginning any work to familiarize the Contractor's employees with the dangers specific to the vessel and with its permit systems for work protocols as well as with the procedures for safety, risk prevention, hazard response and pre-work safety assessments. The Contractor will have access to an uncontrolled copy of the Fleet Safety and Security Manual.

The Contractor must comply with the Fleet Safety and Security Manual, DFO/5737, as well as with the Instructions for working on board the vessel, in addition to the relevant requirements of the *Canada Labour Code* during performance of the following types of work:

- Hot work;
- Work at heights;
- Entry into enclosed spaces;
- Degassing before entering into confined spaces and for hot work;
- Lockout and Tag out;
- Pre-work safety assessments.

For the purpose of the Lockout and identification procedure, the Contractor must provide the padlocks and locking devices for the Contractor's employees as well as those provided by the Chief Engineer for the vessel's crew.

The Contractor and its employees will not have access to the crew's washrooms or lounges. The Contractor must provide the necessary facilities for its employees and subcontractors as needed.

The Contractor must follow the Sorel Base safety instructions.

1.4. ACCESS TO THE WORKPLACE

The Contractor must ensure that TA and CCG personnel have unlimited access to the workplace at all times during the contract.

1.5. WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

The Contractor must provide the TA with the material safety data sheets (MSDSs) for any product subject to WHMIS control that it will supply.

The TA will provide the Contractor with access to the MSDSs for all controlled products on board the vessel which could be used in any work item of the specification.

1.6. SMOKING IN THE WORKPLACE

The Contractor must ensure compliance with the *Non-smokers' Health Act*. The Contractor will ensure that any employer and any person acting on behalf of an employer sees to it that everyone refrain from smoking in any workspace under the employer's control. The Contractor must ensure that there is absolutely no tobacco use on board the vessel.

1.7. CLEAN AND SAFE WORKPLACE

During the work period, the Contractor must maintain the parts of the vessel used by its personnel to access places where it must perform work in a clean and debris-free state and dispose of waste daily.

Areas that are hazardous due to work done according to the specification must be secured and clearly identified by the Contractor, including posting to warn and protect all personnel of the existing danger in accordance with the relevant requirements of the *Canada Labour Code*.

At the end of the contract, the Contractor must rid the vessel of all waste created by performance of the work and return the vessel to a state of cleanliness equal to that which existed at the beginning of the contract period.

Once all predetermined work has been achieved and a final cleaning done, the Contractor's quality guarantee (QG) representative, the TA and the IA will conduct a joint inspection tour of the vessel to visit all places where work was done by the Contractor. All deficiencies or damage noted will be recorded and compared with the digital images taken in advance. The Contractor must, at its own expense, fully correct any damage or deficiency for which it is responsible following the contract work it performed; no portion of the expenses may be charged to the CCG.

1.8. FIRE PROTECTION

The Contractor must ensure that the isolation, removal and installation of fire detection and extinguishing systems, or of any component of such systems, are done by a qualified technician. When a fire detection or extinguishing system is deactivated by the Contractor during the contract, it must then be recertified as being fully functional by a qualified technician. A signed and dated copy of the original certificate must be delivered to the TA and the IA before the end of the contract.

The Contractor must notify the TA and the IA and obtain written approval from the TA before disturbing, isolating, deactivating, interrupting or excluding any part of the fire detection and/or extinguishing systems, including smoke and heat detectors.

The Contractor must ensure protection against fire at all times, including when anyone is working on the vessel's fire detection and/or extinguishing systems. This may be accomplished as suggested below and only with written approval from the TA:

- by deactivation of only one part of the system at a time;
- by maintaining the system with spare parts while the work is in progress;

- by other acceptable means approved by the TA.

The Contractor must note that if it does not take the necessary precautions while performing the work, either on the vessel's fire extinguishing systems or near them, it could cause accidental discharge of the extinguishing agent. The Contractor must, at its own expense, refill and recertify the containers or systems so emptied during its work.

1.9. RETOUCHING/PAINTING

Unless otherwise indicated, any new steel and/or any affected steel must receive two coats of marine primer, compatible with the vessel's paint coating scheme.

The Contractor must prepare any new or affected steel in accordance with the paint manufacturer's standards before painting.

1.10. CCG EMPLOYEES AND OTHERS ON THE VESSEL

CCG or DFO employees and other workers such as manufacturer's agents and/or TCMS or classification society experts may perform work other than the work included in this statement of work on board the vessel throughout this contract. The TA will do everything possible to ensure that such work and/or inspections/examinations taking place do not interfere with the Contractor's work. The Contractor is not responsible for arranging the related inspections or to pay for them, unless otherwise indicated.

1.11. REGULATORY INSPECTIONS AND/OR CLASSIFICATION REVIEW

The Contractor must make the calls and set the schedule for any regulatory inspections and/or classification visit by the responsible authority: TCMS, HC, Environment Canada or other persons required by the specifications. The CCG is responsible for paying Transport Canada and Bureau Veritas inspection fees for the inspector's services. The Contractor is responsible for all costs for assistance associated with inspections (e.g. opening a manhole, conducting a test, etc.).

Any documentation generated by the inspections/visits referred to above and which demonstrates that they have taken place (i.e., signed and dated originals of certificates) must be provided to the TA with copies to the IA.

The Contractor must not substitute regulatory inspections or classification visits with inspections done by the TA or IA.

The Contractor must give the TA and the IA prior notice (at least 24 hours) of regulatory inspections/classification visits so they can attend the inspection/visit.

1.12. TEST RESULTS AND DATA COLLECTION

The Contractor must prepare a plan of tests and trials which must include, at a minimum, all the tests and trials set out in the specifications. This plan must be offered to the TA and the IA for their approval one week before the beginning of the originally planned tests and trials.

All tests, measurements, calibrations and readings must be recorded, signed by the person taking the measurements, dated and provided in electronic and printed report format – to the TA, IA and TC.

Dimensions recorded in the register must have an accuracy of three (3) decimal places (unless otherwise specified) in the measurement system in use on board the vessel.

The Contractor must provide the TA and the IA with recent calibration certificates in force for all instrumentation used in the plan of tests and trials demonstrating that the measurement instruments concerned have been calibrated in accordance with the manufacturer's instructions.

Printed reports will be bound in standard three-ring binders, typed on letter sized stationery and indexed in accordance with the specification's numbering system. Electronic copies will be saved in "Adobe PDF" format without password protection and provided on CD-ROM. The Contractor will supply three paper copies and one electronic copy of each report.

All documentation from the contract period must be incorporated in the collection of data to be remitted to the TA and IA at the end of the contract period.

1.13. TOOLS AND MATERIALS PROVIDED BY THE CONTRACTOR

Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

The Contractor must ensure that all materials are new and have never been used.

The Contractor must ensure that alternative materials such as glands, packaging, insulation, small hardware, oil, lubricants, cleaning solvents, preservatives, paints, coatings, etc., comply with the drawings, guides and instructions of the equipment manufacturer.

Where no particular article is specified or where a substitute must be used, the TA must provide written approval for the substituted article. The Contractor must provide information on the materials used — certificate of classification and quality of various materials — to the TA before use.

The Contractor must provide all the equipment, machinery, material and tools such as cranes, scaffolding, platforms and rigging necessary to carry out the work described in this specification.

The Contractor must provide a waste disposal service for any oil, oily waste, any other hazardous material and any garbage subject to control resulting from the work described by this specification. It will also provide the garbage disposal certificates for any waste mentioned above and these certificates must show that the disposal has been done in accordance with the federal, provincial and municipal directives in force.

1.14. TOOLS AND MATERIALS PROVIDED BY THE GOVERNMENT

All tools will be provided by the Contractor unless otherwise indicated in the technical specification.

Where the tools are provided by the TA they will be returned by the Contractor in the same condition as when they were borrowed. Borrowed tools must be inventoried and the Contractor must sign an acknowledgement of receipt and return them to the TA.

Any Government Supplied Material (GSM) must be received by the Contractor and stored in a secure warehouse or stores having a controlled environment appropriate to the equipment according to the manufacturer's instructions.

1.15. CONTRACTOR FAMILIARIZATION

All personnel working on the Sorel Canadian Coast Guard base must take a familiarization session and sign form 10.A.7. There will be two familiarization sessions. The first session will be held on the day of the meeting when construction begins, and the second will take place two weeks later. Familiarization sessions will be led by an employee of the Canadian Coast Guard. Each session will last 2 hours.

1.16. RESTRICTED ACCESS AREAS

Other than for security or for the purpose of work required by the specification, the Contractor does not have the right to enter the following places: any cabins, offices, workshops, mechanic's office, wheelhouse, control room, any washrooms, the galley, mess, lounges or any other sector where access is restricted by notice.

The Contractor must notify the TA at least 24 hours in advance before undertaking work in inhabited spaces or offices. Such notice will give the CG the time needed to evacuate its personnel and ensure safety in these rooms.

1.17. INSPECTIONS BY THE CONTRACTOR AND PROTECTION OF THE WORKPLACE AND EQUIPMENT

The Contractor must coordinate an inspection of the condition and location of items to be removed with the TA and the IA before performing the specified work or accessing a location to work in it.

The Contractor must repair, at its own expense, any damage resulting from its actions during performance of its work and which may be attributed to its performance. Any material used in a replacement or repair must comply with the criteria for the material provided by the Contractor as indicated above in the Tools and Materials Provided by the Contractor section.

The Contractor must protect all equipment and all neighbouring areas against damage. Work areas must be protected against flooding and water leaks, debris from sandblasting, welding, etc. Temporary tarpaulins must be placed over work areas.

1.18. RECORDS OF WORK IN PROGRESS

The TA and IA may record the work in progress by various means including, but not limited to, photographs and video, whether digital or film.

1.19. LIST OF CONFINED SPACES

The Contractor may ask for a list of the vessel's confined spaces during the meeting preceding the refit.

1.20. LEAD-BASED PAINTS AND PAINT COATINGS

The Contractor will not use lead-based paints.

CCG vessels were coated in lead-based paints in the past and there may therefore be certain work done by the Contractor such as grinding, welding or hot work that could extract the lead from this paint. The Contractor must ensure that places in affected work areas are examined for any lead content and ensure that the work is done in accordance with the applicable federal and provincial regulations.

The Contractor must demonstrate the product's approval by HC for hull paints controlled by HC and the Pest Management Regulatory Agency.

1.21. MATERIALS CONTAINING ASBESTOS

The Contractor will not use any material that contains asbestos.

The handling of any material containing asbestos will be done by persons trained and qualified in asbestos disposal in accordance with the regulations in force of the federal, provincial and municipal governments as well as in accordance with the FSSM. The Contractor must provide the TA and the IA with certificates showing that removal from the vessel of any material containing asbestos has been done in accordance with the regulations in force from the federal, provincial and municipal governments.

1.22. REMOVED MATERIALS AND EQUIPMENT

All material removed under this specification remains the property of the CCG, unless instructions to the contrary are provided in the specifications section.

1.23. WELDING CERTIFICATION

The contractor and the welders involved in the work must be certified by the Canadian Welding Bureau. The contractor must be certified for the welding of steel and aluminum in accordance with CSA Standard W47.1, division 2 and with CSA Standard W47.2, division 2. Copies of certifications (including those of the welders) will be submitted to the TA and the IA.

1.24. ELECTRICAL INSTALLATIONS

All electrical installations and repairs must be done in accordance with the latest revisions of TP127E - Electrical Standards of Transport Canada Marine Safety and of standard 45-Recommended Practice for electrical installation on ships – of the IEEE. Standard TP127 takes precedence over the IEEE standard.

1.25. REFRIGERATION AND AIR CONDITIONING SYSTEMS

Any work on refrigeration and air conditioning systems must be performed in accordance with Sections 2.7 and 2.8 of the *Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems*.

1.26. ELECTRICAL POWER SUPPLY

The CCG must allow the Contractor to use a limited number of 115 VAC, 1 phase, 15 amp outlets for the duration of the contract, depending on the network's capacity.

1.27. CHEMICAL TOILET

The Contractor must provide chemical toilets for its employees. The Contractor's staff will not be authorized to use the washrooms inside buildings at the Canadian Coast Guard base. Note that the washrooms on board vessels will be out of service.

1.28. TRADESMEN'S COMPETENCE

The Contractor must use qualified, certified (if applicable) and competent tradespeople and supervise them to ensure a high and consistent quality of performance.

The welders, mechanics and electricians with less than 5 years of experience will be considered an apprentice. Those must be locally supervised by a competent tradesman who possess more than 5 year of experience.

The welders, mechanics and electricians must have completed a recognize training in their respective field of work.

The head of inspection may ask to consult and record details of the certification or competencies of the Contractor's tradespeople. This request must not be exercised unduly, but is only intended to ensure that qualified tradespeople are performing the necessary work.

1.29. INSPECTION OF FIRE FIGHTING SYSTEMS

The Contractor must use qualified, certified (if applicable) and competent tradespeople and supervise them to ensure a high and consistent quality of performance.

The head of inspection may ask to consult and record details of the certification or competencies of the Contractor's tradespeople. This request must not be exercised unduly, but is only intended to ensure that qualified tradespeople are performing the necessary work.

1.30. CANADA SHIPPING ACT

All changes and work carried out must be made according to the regulations of the 2001 Canadian Shipping Act and the associated regulations.

1.31. RULES FOR THE CLASSIFICATION –BUREAU VERITAS

All changes and work carried out must be made according to the rules of Bureau Veritas. This requirement is only applicable to the NGCC Leim.

2. SERVICES

Not applicable

3. LIST OF ACRONYMS

BV	Bureau Veritas
CA	Contracting authority (PWGSC)
CCG	Canadian Coast Guard
CLC	Canada Labour Code
CPM	Contractor-provided material
CSA	Canadian Standards Association
CWB	Canadian Welding Bureau
CWB	Canadian Welding Bureau
DFO	Department of Fisheries and Oceans
FSR	Field Service Representative
FSSM	Fleet Safety and Security Manual
GPM	Government-provided material
HC	Health Canada
IEEE	Institute of Electrical and Electronic Engineers
MSDS	Data sheet
OHS	Occupational Health and Safety
OL	Overall length
PWGSC	Public Works and Government Services Canada
SSMS	Safety and Security Management System
TA	Technical Authority – Owner’s Representative (CCG)
TBS	Treasury Board of Canada Secretariat
TC	Transport Canada Marine Safety
TSR	Technical Services Representative
Workplace Hazardous Materials Information System (WHMIS)	Workplace Hazardous Materials Information System

4. CCGS <i>LEIM</i> (L 023)		
Maintenance Manager:	Email:	Office: Cell:

4.10. SAFETY AND SECURITY EQUIPMENT

4.10.1 PORTABLE FIRE EXTINGUISHER

4.10.1.1 – SCOPE

The Contractor must inspect all fire extinguishers and renew the certification of all extinguishers whose certification date has expired.

4.10.1.2 – REFERENCES

- ISV22 – 30000RMM13 – Drawing of general layout
- CCGS *Leim* – portable fire extinguishers

4.10.1.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Undertake the annual inspection of eighteen (18) portable fire extinguishers. Fire extinguisher inspection and maintenance must be entrusted to a qualified supplier at the Contractor's expense and responsibility. The inspection certificate must be issued by a supplier authorized by Bureau Veritas.
- Remove the fire extinguishers in a sequence such that the number of fire extinguishers off the vessel is never more than a third of those that are on board. The Chief Engineer will determine the order in which the fire extinguishers must leave the vessel.
- Once the maintenance has been completed, return all the fire extinguishers to the vessel and put them back in place according to the Chief Engineer's instructions.
- Note: Five (5) fire extinguishers are eligible for hydrostatic testing, specifically #4 (stairwell engine room), #8 (passageway between mess and C/E cabin), #9 (passageway between lower rooms), #10 (wheelhouse), and #13 (dry lab).

Note: No dry chemical extinguisher is eligible for six-year maintenance.

4.10.1.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer and the Bureau Veritas inspector.

Testing

- Fire extinguisher testing must be performed in compliance with the regulations of the Bureau Veritas classification society.

Certification

- The Contractor must provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor must also send an electronic copy of certificates to the Vessel Maintenance Manager.

4.10.1.5 – DELIVERABLES

Drawings/reports

- The Contractor must provide the Chief Engineer with two (2) paper copies of reports and checklists that explain in detail the work and necessary modifications. The Contractor must also send an electronic copy of all reports to the Vessel Maintenance Manager.

4.10.2 FIRE DETECTION SYSTEM

4.10.2.1 – SCOPE

The purpose of this specification is to ensure that the Contractor provides certified labour to perform the annual inspection and certification of the fire detection system.

4.10.2.2 – REFERENCES

- 915.5 - FIRE DETECTION SYSTEM - Drawing_Binder_25M_(H008)_ISV_IFDS_2011_08_15_rev03_FT
- ISV22-36000RMM7 – Fire safety plan
- 915.5 - FIRE DETECTION SYSTEM - ISV_IFDS_System Binder_25M_22M_(ISV008,ISV009,ISV010)_2011_08_12_FT

4.10.2.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- The vessel is equipped with a Techsol integrated fire detection system with a Notifier NFS2-640 fire alarm panel. The Notifier NFS2-640 panel is connected to the integrated fire alarm system, which is part of the vessel's surveillance and alarm system.
- Before work begins, the Contractor must arrange for a visit from a Bureau Veritas classification society inspector.
- Provide certified labour to conduct the annual inspection and certification of the fire detection system. The inspection certificate must be issued by a supplier authorized by Bureau Veritas.
- The fire detection system control panel is found on the port side of the wheelhouse.

4.10.2.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer and the Bureau Veritas inspector.

Certification

- The Contractor must provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor must also send an electronic copy of certificates to the Vessel Maintenance Manager.

4.10.2.5 – DELIVERABLES

Drawings/reports

- The Contractor must submit to the Chief Engineer one (1) hard copy of the typed report, detailing the inspections, modifications and repairs made, prior to acceptance of this item. The Contractor must also send an electronic copy of the report to the Vessel Maintenance Manager.

4.10.3 ANNUAL INSPECTION OF FIXED FIRE SUPPRESSION SYSTEM

4.10.3.1 – SCOPE

- The purpose of this specification is to perform maintenance on and certify the fixed fire suppression system on the CCGS *Leim*.
- The Contractor must communicate with the Chief Engineer before undertaking the work for this item. This work must be performed in conjunction with the portable fire extinguisher maintenance without reducing the fire suppression capacity aboard the vessel.
- The fixed fire suppression system is a 3M Novec 1230 system.

4.10.3.2 – REFERENCES

728 - FIRE EXTINGUISHING SYSTEMS, FIXED – SPECIFICATIONS

4.10.3.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Provide authorized labour to test and inspect the vessel's Novec 1230 system as part of the annual inspection and certification of this system. The inspection certificate must be issued by a supplier authorized by Bureau Veritas.
- The Chief Engineer must attend all tests.
- Aside from the following tests, the Contractor must perform all tests required by the Bureau Veritas inspector on site. In the estimate, the Contractor must provide the cost of testing the alarms (indicator lights, sirens and bells) on all devices, testing the nitrogen-releasing cylinders, testing ventilation closure devices, and testing slack loops and cables.
- Use air pressure to clean the pipes and pneumatic actuators and ensure that they work properly. Pipes and nozzles must be free from obstruction.
- Ensure that the alarm displays and sirens work properly. The Contractor must weigh each cylinder and record the results. At the end of the refit, the Contractor must provide the Chief Engineer with copies of all certificates.
- When the tests and inspections are completed, reassemble and reactivate the systems.
- Be licensed to renew this system's certification in accordance with the most recent requirements in the BV classification society's regulations.
- The Novec fire extinguishers are found in the cargo hold.

4.10.3.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer, the Vessel Maintenance Manager and the BV inspector.

Testing

- The Chief Engineer must be present for the system inspection and test.

Certification

- The Contractor must provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor must also send an electronic copy of certificates to the Vessel Maintenance Manager.

4.10.3.5 – DELIVERABLES

Drawings/reports

- The Contractor must submit to the Chief Engineer a hard copy of the typed report, detailing the inspections, modifications and repairs made prior to acceptance of this item. The Contractor must also send an electronic copy of the report to the Vessel Maintenance Manager.

4.10.4 DEFECTIVE LEVEL SENSORS

4.10.4.1 SCOPE

The purpose is to repair the level sensors in certain tanks which give an erroneous reading.

4.10.4.2 TECHNICAL DESCRIPTION

Provide the services of a senior electrician from the Techsol company to replace or repair defective sensors:

- Forepeak: TM-50b3g190175w
 - Starboard afterpeak: TM-50B3GGK0080W
 - Aft port afterpeak: TM-50B3GGK0080W
 - Port wastewater: TM-50B3GGK0080W
 - Starboard wastewater: TM-50B3GGK0080W
 - Double-bottom CENTRE (TANK #3): TM-50B3G190050W
 - Starboard side tank (TK #9): TM-50B3G190050W
- The contractor must provide for filling to full capacity and emptying each tank to enable calibration of the sensors.
 - The costs for labour and parts will be processed on a form 1379.
 - The contractor must engage the Techsol company (Mathieu Méthot: 418-688-2230) for this work and is to provide for an amount of \$5,000 for these services. The actual cost will be corrected on Form 1379 with supporting invoices.

4.10.4.3 PROOF OF PERFORMANCE

Inspection

All work must be approved by the TA.

4.11. HULL AND STRUCTURE

4.11.1 REPLACEMENT OF CEILING PANEL IN LAUNDRY ROOM

4.11.1.1 – SCOPE

- Change Isolamin ceiling panel in laundry room.

4.11.1.2 – REFERENCES

- 310.2 – Wet space linings
- Photo



4.11.1.3 – TECHNICAL DESCRIPTION

Ceiling manufacturer: Isolamin wet room panel PA 33 C 25

The Contractor must perform the following work:

- Remove and replace the ceiling panel.
- The Contractor must order an Isolamin PA33C25W panel.
- The panel must be cut to the appropriate size and installed.

4.11.1.4 – PROOF OF PERFORMANCE

- All work must be completed to the satisfaction of the Chief Engineer.

4.11.1.5 – DELIVERABLES

- The Contractor must provide the Chief Engineer with a paper copy of the report, detailing the modifications and repairs made, prior to acceptance of this item. The Contractor must also send an electronic copy of the report to the Vessel Maintenance Manager.

- The following information is to be included:
 - Date of work and date of report
 - Description of work performed
 - A list of materials and all parts replaced or installed

4.11.2 REPAIR OF EMERGENCY EXIT HATCHES

4.11.2.1 – SCOPE

- Repair three (3) emergency exit hatches.

4.11.2.2 – REFERENCES

- ISV22-30400RMM3
- 305.2.1 Emergency exit hatches

4.11.2.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Remove all hatch hinge pins.
- Remove and replace all hatch springs. The new springs must be similar to the old ones.
- Add an Alemite grease gun to each hinge to pump grease between the hinge pin and its assembly. Once assembly has been completed, grease supplied by the crew must be applied.
- Apply two (2) coats of Intershield 300 primer to all sections damaged by the work.

4.11.2.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer, the Vessel Maintenance Manager and the BV inspector.

Testing

- The Chief Engineer must be present for the emergency exit hatch inspection and test.

Certification

- The Contractor must provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor must also send an electronic copy of certificates to the Vessel Maintenance Manager.

4.11.2.5 – DELIVERABLES

- The Contractor must provide the Chief Engineer with a paper copy of the report, detailing the modifications and repairs made, prior to acceptance of this item. The Contractor must also send an electronic copy of the report to the Vessel Maintenance Manager.
- The following information is to be included:
 - Date of work and date of report
 - Description of work performed
 - A list of materials and all parts replaced or installed

4.11.3 INSULATION UNDER THE BED IN COMANDER'S ROOM

4.11.3.1 – SCOPE

- Add insulation under the bed in the commander's room

4.11.3.2 – REFERENCES

Photo

4.11.3.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Dismantle and put away, outside cabin, the following:
 - a. Desk chair
 - b. Bed & structure.
 - c. Writing desk..
- Add marine insulation (approved by BV) on the two (2) walls under the bed on an area of 3.2 square meters. The insulation must be fixed to the bulkheads using steel rods with a diameter of 3 mm, spaced at a maximum of 300mm. The rods should be 12 mm longer than the thickness of the insulation. Spring rings will retain the insulation in place.
- All joints and edges of vapour barrier and heads of pins to be taped after insulation and prior to fitting of sheeting or lining. Extreme care to be taken to maintain the integrity of the vapour barrier.
- Unless noted otherwise, the last layer of insulation must be covered with a vapour barrier.
- Replace all removed material, bed, chair and desk.

4.11.3.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer, the Vessel Maintenance Manager and the BV inspector.

Testing

- The Chief Engineer must be present for the emergency exit hatch inspection and test.

Certification

- The Contractor must provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor must also send an electronic copy of certificates to the Vessel Maintenance Manager.

4.11.3.5 – DELIVERABLES

- The Contractor must provide the Chief Engineer with a paper copy of the report, detailing the modifications and repairs made, prior to acceptance of this item. The Contractor must also send an electronic copy of the report to the Vessel Maintenance Manager.

- The following information is to be included:
 - Date of work and date of report
 - Description of work performed
 - A list of materials and all parts replaced or installed

4.12. PROPULSION AND MANOEUVRING SYSTEMS

N/A

4.13. VESSEL'S GENERATION OF ELECTRICAL POWER

N/A

4.14. POWER DISTRIBUTION

N/A

4.15. AUXILIARY SYSTEMS

4.15.1 OVERHAUL OF BILGE/BALLAST, FIRE/GENERAL SERVICE PUMPS

4.15.1.1 – SCOPE

- Inspect internal parts, take measurements and put everything back together with new bearings, seals and gaskets to carry out the five-yearly inspection.

4.15.1.2 – REFERENCES

- 715.2 – Bilge pump- user manual
- 715.2 – Bilge pump specification
- 720.2 – Ballast pump- user manual
- 720.2 – Ballast pump specification
- 725.2 – Fire pump- user manual
- 725.2 – Fire pump specification

4.15.1.3 – TECHNICAL DESCRIPTION

Pump manufacturer: MP Pumps, Inc. Model: HHLF-Flomax 1½»

The Contractor must perform the following work:

- Disassemble and inspect the two bilge/ballast, fire/general service pumps to correct the low-flow issue. The work must be done by a repairer authorized by MP Pumps, Inc.

4.15.1.4 – PROOF OF PERFORMANCE

- All work must be completed to the satisfaction of the Chief Engineer and the office inspector veritas.

4.15.1.5 – DELIVERABLES

- The Contractor must submit a written report in hard copy and PDF format.
- The following information is to be included:
 - Date of work and date of report
 - Technician name
 - Diagnostic of problems, if necessary
 - Description of work performed
 - Measurements of components and values beyond minimum tolerances recommended by the manufacturer
 - A list of materials and all parts replaced or installed
- Provide photos of internal components.

4.16. DOMESTIC SYSTEMS

4.16.1 CLEANING AND INSPECTION OF THE CENTRAL VENTILATION SYSTEM

4.16.1.1 – SCOPE

Conduct a thorough cleaning of the ventilation system.

4.16.1.2 – REFERENCES

LEIM-81500RMM16 - HVAC System Diagram

LEIM-81510RMM7 - HVAC Ducting Diagram

4.16.1.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Conduct a thorough cleaning of the ship's ventilation system using mechanical suction/pulsing/brushing (octopus) methods and a vacuum equipped with a HEPA filter.
- The ventilation system includes the following components: the central ventilation ducts for the dryer and the bathroom; heat exchangers; diffusers; and external air intake.
- Degrease the galley hood, including its fan and exhaust duct.
- The Contractor must take the necessary measures to adequately protect furniture and equipment during the work.

4.16.1.4 – PROOF OF PERFORMANCE

Inspection

All work must be completed to the satisfaction of the Chief Engineer.

Certification

The Contractor must provide the Chief Engineer with two (2) paper copies of inspection certificates along with the original. The Contractor must also send an electronic copy of certificates to the Vessel Maintenance Manager.

4.16.1.5 – DELIVERABLES

Drawings/reports

The Contractor must provide the Chief Engineer with two (2) paper copies and one electronic copy of a report indicating the general condition of the ventilation system before and after the work. This report must include photos of the various components of the ventilation system before and after cleaning.

4.17. DECK EQUIPMENT / VESSEL SUPPORT SYSTEMS

N/A

4.18. COMMUNICATION AND NAVIGATION SYSTEMS

N/A

4.19. INTEGRATED CONTROL SYSTEMS

N/A

5. CCGS *ÎLE SAINT-OURS* (I 002)

Maintenance Manager:	Email:	Office: Cell:
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5.10. SAFETY AND SECURITY EQUIPMENT

5.10.1. CERTIFICATION OF FIRE EXTINGUISHERS

5.10.1.1 – SCOPE

- The Contractor must inspect all fire extinguishers and renew the certification of all extinguishers whose certification date has expired.

5.10.1.2 – REFERENCES

- CCGS *Île Saint-Ours* – Portable fire extinguishers

5.10.1.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- An annual inspection of portable fire extinguishers must be performed. Fire extinguisher inspection and maintenance must be entrusted to a qualified representative at the Contractor's expense and responsibility.
- Remove the fire extinguishers in a sequence such that the number of fire extinguishers off the vessel is never more than a third of those that are on board.
- Once the maintenance has been completed, return all the fire extinguishers to the vessel and put them back in place according to the Chief Engineer's instructions.

5.10.1.4 – DELIVERABLES

Drawings/reports

- The Contractor must provide the Chief Engineer with two (2) paper copies of reports and checklists that explain in detail the work and necessary modifications. The Contractor must also send an electronic copy of all reports to the Vessel Maintenance Manager.

5.10.2 ANNUAL INSPECTION OF FIXED FIRE SUPPRESSION SYSTEM

5.10.2.1 – SCOPE

Perform maintenance and certification of the fixed fire suppression system.

5.10.2.2 – TECHNICAL DESCRIPTION

The fixed fire suppression system includes two 75-lb cylinders of CO₂ for the engine room and one 100-lb cylinder of CO₂ for the forehold.

The Contractor must perform the following work:

Communicate with the Chief Engineer before undertaking the work for this item. This work must be performed in conjunction with the portable fire extinguisher maintenance without reducing the fire suppression capacity aboard the vessel.

- TC must perform maintenance and certification of the fixed fire suppression system.
- Verify proper operation of all remote CO₂ release cables.
- Verify proper operation of all pressure switches.
- Verify proper operation of all heat and smoke detectors.
- Verify proper operation of all manual fire stations.
- Verify proper operation of all fire alarm panels.
- Install a voltmeter to see if the charger for the batteries of the CO₂ system's audible and visual alarm works.
- All the distribution lines and flexible hoses must be visually checked and cleared with compressed air.
- Check the leak detector in the CO₂ cylinder compartment and render operational the audible and visual alarm located behind the stairs leading down to the engine room. The Contractor must remove the stairs and a bolted 3 ft. x 5 ft. wall. Check the detector and do what is needed to render it operational. Parts found to be defective will be replaced, and the costs will be adjusted on PWGSC form 1379.

5.10.2.3 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer and the TC inspector.

Testing

- The Chief Engineer must be present for the system inspection and test.

Certification

- The Contractor must provide the Chief Engineer with two (2) paper copies of the original inspection certificates. The Contractor must also send an electronic copy of certificates to the Vessel Maintenance Manager.

5.10.2.4 – DELIVERABLES

Drawings/reports

- The Contractor must provide the Chief Engineer with a paper copy of the report, detailing the inspections, modifications and repairs made, prior to acceptance of this item. The Contractor must also send an electronic copy of the report to the Vessel Maintenance Manager.

5.11. HULL AND RELATED STRUCTURE

5.11.1 INSTALLATION OF DRAIN, UPPER DECK, PORT SIDE

5.11.1.1 – SCOPE

Make and install a drain under the upper deck, port side, near the ladder.

5.11.1.2 – REFERENCES

- Photos



5.11.1.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Make and install an aluminum drainage pipe roughly two (2) in. in diameter and eight (8) ft. long with two (2) 90-degree elbows under the hole in the upper deck, port side. The pipe must be attached to the wall with brackets.
- Apply one coat of primer to all affected surfaces and brackets.

5.11.1.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer and the Vessel Maintenance Manager.

5.11.2 REPAIR FOUR (4) WINDOWS TIMONERIE

5.11.2.1- SCOPE

Repair four (4) windows on the front and sides in the wheelhouse.

5.11.2.2 – RÉFÉRENCES

➤ Photos



➤ Window brand : Beclawat.

5.11.2.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Remove all accessories from the front of the four (4) wheelhouse windows.
 - Port side window: Dismantle a gyro rail and a heater
 - Starboard side window: Dismantle a gyro rail and a heater
 - Front port window: Dismantle control console and control device
 - Front starboard window: Dismantle control console, steering gear control and battery charger.
- Remove the frames from each of the four (4) windows.
- Change the neoprene gasket of each of the (4) windows and check the condition of the internal parts such as spring.
- Reassemble and perform a leak test.

5.11.2.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer and the Vessel Maintenance Manager.

5.12. PROPULSION AND MANOEUVRING SYSTEMS

5.12.1 FIVE-YEAR MAINTENANCE OF PORT PROPULSION DIESEL ENGINE AND THEIR TRANSMISSIONS

5.12.1.1 – SCOPE

- Perform the five-year inspection of main diesel engine port side and their transmissions.
- The Contractor must obtain the services of a firm recognized and certified by Detroit Diesel and Pay & Brinck to perform a complete overhaul of the port Detroit Diesel Series 92 propulsion engines and the two (2) Pay & Brinck gearboxes.
- All work must be performed according to the manufacturer's procedures and specifications. Once the engine is fully dismantled, all parts must be cleaned and inspected, and the necessary measurements and clearances taken to allow for inspection by the Marine Safety expert and the CCG and PWGSC representatives. The engine and transmissions must then be reassembled.
- The work must be carried out aboard the vessel, which will be wintering at the CCG Sorel base. The vessel must be available as of January 8, 2017, and the work must be completed by April 15, 2017.
- The Contractor is responsible for contacting the CCG representatives and Marine Safety expert within the required time.
- Optionally, the Contractor must submit a quote for leaving and entering the vessel, with transport to the shop, with the propulsion diesel engine port side and the two (2) transmissions. This will include unbolting the engine from the base, disassembling accessories (walls, stairs), and operating a crane.
- Address of base:
Fisheries and Oceans Canada/Coast Guard
15 du Prince Street
Sorel, QC
J3P 4J4
-

5.12.1.2 – REFERENCES

- Detroit Diesel Series 92 manual
- Detroit Diesel Series 92 maintenance recommendations
- Pay & Brinck A/S, PB130 transmission manual
- Pay & Brinck A/S, transmission maintenance recommendations

5.12.1.3 – TECHNICAL DESCRIPTION

Engine type: Detroit Diesel Series 92

Port: Model 8082-3000 - Serial number: 8VF 100926

Transmission: Pay & Brinck A/S, PB130

Port: Model: 1101

Starboard: Model: 1102

The Contractor must perform the following work:

- All work must be performed according to the manufacturers' procedures and specifications. Once the engine and transmissions are fully dismantled, all parts must be cleaned and inspected, and the necessary measurements and clearances taken to allow for inspection by the Marine Safety expert and the CCG and PWGSC representatives. The engine must then be reassembled.
- The Contractor is responsible for contacting the CCG and PWGSC representatives and Marine Safety expert within the required time.
- The MSO/TC expert and CCG and PWGSC representatives will be required to attend start-ups and testing and must be notified within the required time.
- All work must be performed according to the manufacturers' procedures and specifications. All parts deemed defective must be replaced as per the manufacturers' recommendations.
- Before undertaking the work, it will be necessary to disconnect the engines from the transmissions and the transmissions from the propeller shafts; as well as the exhaust, fuel, and cooling lines; the starters; and the Kobelt controls. Reassemble and align once the work has been completed.
- Allow for a period dockside for start-up and adjustments, once the vessel has been returned to service. A four-hour sea trial will be conducted in the spring of 2017 (possibly early April 2017, depending on when the vessel is returned to service) at full strength during a full workday, with a technician of the Contractor present. The Contractor must demonstrate that power output and overall operation are satisfactory and in accordance with the manufacturers' specifications. All safeguards and emergency stops must be checked, and the values recorded in the report.

Main diesel engine:

- Once the port engine is fully dismantled, all parts must be cleaned and inspected, and the necessary measurements and clearances taken to allow for inspection by the MSO/TC expert and the CCG and PWGSC representatives. The engine must then be reassembled according to the manufacturer's specifications. The Contractor will be responsible for disposing of the used oil and coolant in accordance with the regulations in force.
- - Refurbish the following components:
 - a) the 2 cylinder heads (covering 4 cylinders), including the 8 injectors
 - b) the 8 sets of cylinders, including the connecting rods, pistons, piston rings and liners (replace pistons, piston rings, cylinders, connecting rods)
 - c) the turbo
 - d) the air starter
 - e) the fresh water pump
 - f) the salt water pump

- g) the lubricating oil pump
 - h) the fuel boost pump
 - i) the blower
-
- Supply and replace with new ones all gaskets, packings and hoses.
 - Clean, inspect and perform a hydrostatic test of the oil and air coolers and fresh water and fuel return coolers.
 - Replace the gasket between the governor and the engine block.
-
- Supply new parts and replace the following components:
 - a) Crankshaft, camshaft and gear friction and thrust bearings
 - b) Front and rear crankshaft seals
 - c) Connecting rod bearings
 - d) Temperature regulator
 - e) Expansion tank cap
 - f) Necessary fastenings
 - g) All filters (fuel, oil and air)
 - h) Lubricating oil
 - i) Fuel priming pump (transfer)
 - j) Cooling water high temperature sensor
 - k) Low oil pressure sensor
 - If other mechanical parts need to be replaced, the cost of parts must be adjusted on form 1379.
 - The injection pump must be disassembled, cleaned, and inspected, and the necessary measurements and clearances taken. Parts found to be defective will be replaced, and the costs will be adjusted on PWGSC form 1379. The injection pump and governor must be tested.
 - All parts used must be OEM, and the exchange system is accepted.
 - Perform the engine and transmission commissioning and adjustments for a period of four (4) hours with a running-in oil provided by the Contractor. The Contractor must demonstrate that power output and overall operation are satisfactory and in accordance with the manufacturer's specifications. All safeguards must be checked, and the values recorded in the report. Submit a written report indicating the different engine parameter values (RPM, TORQUE, POWER, OIL PRESSURE, WATER TEMP., EXH. TEMP., OIL TEMP., etc.) during the test.
 - The Marine Safety expert and CCG and PWGSC representatives will be required to attend start-up and testing and must be notified within 48 hours in advance. In order to allow them to go there.
 - After testing, conduct an oil analysis and replace the oil and oil filter. Open the dirty oil filter in the presence of the CCG representative.
 - The work must be completed no later than 01 April 2017.
 - Once the Contractor has completed the engine repair on board, the engine/transmission must be properly aligned to the propeller shaft.
 - The Contractor must perform the initial start-up of the engine aboard the vessel.

-
- In the spring, the technician must conduct an engine operation test for 1 hour. The engine must be put under load.

Transmissions:

- The work involves carrying out a major overhaul of each transmission according to the manufacturer's recommendations.
- Before undertaking the work, the Contractor is responsible for obtaining the services of a technician who is qualified for this type of transmission.
- The port transmission probably has an internal leak because it takes about 20 seconds to engage, whereas it takes 2 seconds on the starboard side.

- Once the transmissions are fully dismantled, all parts must be cleaned and inspected, and the necessary measurements and clearances taken to allow for inspection by the MSO/TC expert and the CCG and PWGSC representatives. The transmissions must then be reassembled according to the manufacturer's specifications. The Contractor will be responsible for disposing of the used oil in accordance with the regulations in force.
- The Contractor is responsible for contacting the CCG and PWGSC representatives and MSO/TC expert within the required time.
- Supply and replace with new ones all gaskets, packings and hoses.
- Supply and replace with new parts the following components:
 - All bearings
 - All clutch plates (clutch pack)
 - Necessary fastenings
 - All filters
 - Lubricating oil
- If other mechanical parts need to be replaced, the cost of parts must be adjusted on PWGSC form 1379.
- All parts used must be OEM.
- Clean, inspect and perform a hydrostatic test of the oil coolers.
- The Contractor must submit to the CCG representative four (4) copies plus an electronic copy of a full report on the work performed, including the clearances and measurements, and must list all the parts that were replaced.
- Perform the transmission commissioning and adjustments.
- After testing, conduct an oil analysis and replace the oil and oil filters. Open the dirty oil filters in the presence of the CCG representatives.

5.12.1.4 – PROOF OF PERFORMANCE

- All work must be completed to the satisfaction of the Chief Engineer.

5.12.1.5 – DELIVERABLES

- The Contractor must submit to the CCG representative three (3) copies of a full written report in PDF format on the work performed, including the clearances and measurements, and must list all the parts that were replaced.
- The following information is to be included:

- Date of work and date of report
- Technician name
- Description of work performed
- A list of materials and all parts replaced or installed

5.12.2 - ANNUAL MAINTENANCE OF MAIN ENGINES

5.12.2.1 – SCOPE

- Perform the annual inspection and maintenance of the main diesel engine stbd side.

5.12.2.2 – TECHNICAL DESCRIPTION

Engine type: Detroit Diesel series 92

Starboard: Model 8082-7000 - Serial number: 8VF 100917

Engine hours:Starboard: 9295 hrs.

The Contractor must particularly perform the following work:

- Provide the services of an engineer for the annual maintenance of the Detroit Diesel series 92 engines.
- The technician must be an authorized by the engine's manufacturer.
- The engineer must perform all upgrades and repairs recommended by the manufacturer.
- The technician must perform the work recommended by the manufacturer based on the engine hours.
- In the spring, the technician must conduct an engine operation test for 1 hour. The engine must be tested under load.

5.12.2.3 – PROOF OF PERFORMANCE

- All work must be completed to the satisfaction of the Chief Engineer.
-

5.12.2.4 – DELIVERABLES

- The technician must submit a written report in hard copy and electronic form.
- The following information is to be included:
 - Date of work and date of report
 - Technician name
 - Diagnostic of problems, if necessary
 - Description of work performed
 - A list of materials and all parts replaced or installed.

5.12.3 STEERING SYSTEM

5.12.3.1 – SCOPE

- Disassemble and repair the starboard hydraulic cylinder.
- Repair the steering system slide.

5.12.3.2 – REFERENCES

Photo



5.12.3.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Electrically isolate the pump motors for the duration of the work.
- Remove and disassemble the cylinder to perform the necessary repairs, such as changing the seals, checking the inside of the cylinder, and taking measurements.
- Perform a leak test prior to putting the cylinder back into place.
- Repair the rudder components related to the roller guide, which seems unevenly worn.
- Identify parts that do not comply with the manufacturer's specifications or that show abnormal signs of wear, and give the details to the CCG representative. Defective parts must be replaced with new, OEM parts and must be addressed on form 1379.
-

5.12.3.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer and the TC inspector.

Testing

- Conduct 15-minute tests to demonstrate proper operation of the hydraulic system of the steering gear in the presence of the Chief Engineer and the TC representative.
- The Contractor is responsible for contacting the TC representative within the required time in order for the latter to attend the tests.
-

Certification

- The Contractor must provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor must also send an electronic copy of certificates to the Vessel Maintenance Manager.

5.12.3.5 – DELIVERABLES

Drawings/reports

- The Contractor must submit to the CCG representative two (2) copies of a full written report in PDF format on the work performed, including the cylinder measurements and clearances, and must list all the parts that were replaced. A report on the cylinder pressure test is to be submitted as well. An electronic copy of the report must be sent to the CCG representative.
- The following information is to be included:
 - Date of work and date of report
 - Technician name
 - Description of work performed
 - A list of materials and all parts replaced or installed
-

5.13. VESSEL'S GENERATION OF ELECTRICAL POWER

5.13.1 FIVE-YEAR MAINTENANCE OF PORT DIESEL GENERATOR ENGINE

5.13.1.1 – SCOPE

- Perform the five-year inspection of the port diesel generator engine.
- The Contractor must obtain the services of a firm recognized and certified by Perkins to overhaul the port generator engine.
- Address of base:
Fisheries and Oceans Canada/Coast Guard
15 du Prince Street
Sorel, QC
J3P 4J4
- All work must be performed according to the manufacturer's procedures and specifications. Once the engine is fully dismantled, all parts must be cleaned and inspected, and the necessary measurements and clearances taken to allow for inspection by the Marine Safety expert and the CCG and PWGSC representatives. The engine must then be reassembled.
- The Contractor is responsible for contacting the CCG representatives and Marine Safety expert within the required time.

5.13.1.2 – REFERENCES

- Perkins 4.236 4-cylinder engine manual
- Perkins engine maintenance recommendations

5.13.1.3 – TECHNICAL DESCRIPTION

Engine type: Perkins 4.236, 4 cylinders

Port: Serial number: LD20663U97544L
Engine hours: Port: 4432.4 hrs

The Contractor must perform the following work:

- All work must be performed according to the manufacturer's procedures and specifications. Once the engine is fully dismantled, all parts must be cleaned and inspected, and the necessary measurements and clearances taken to allow for inspection by the Marine Safety expert and the CCG. The engine must then be reassembled.
- Contact the CCG and Marine Safety expert within 48 hours in advance.

Refurbish the following components:

- a) The cylinder heads, including the injectors
- b) The lubricating oil pump
- c) The turbo
- d) The fresh water pump
- e) The Jabsco salt water pump
- f) The six (6) sets of cylinders, including the connecting rods, pistons, piston rings

and liners

- Clean, inspect and perform a hydrostatic test of the oil and air coolers.
- Supply and replace with new ones all gaskets, packings and hoses.
- Supply new parts and replace the following components:
 - a) Crankshaft, camshaft and gear friction and thrust bearings
 - b) Front and rear crankshaft seals
 - c) Connecting rod bearings
 - d) Temperature regulator
 - e) Expansion tank cap
 - f) Necessary fastenings
 - g) All filters (fuel, oil and air)
 - h) Lubricating oil
 - i) Fuel priming pump (transfer)
 - j) Cooling water high temperature sensor
 - k) Low oil pressure sensor
- If other mechanical parts need to be replaced, the cost of parts must be adjusted on form 1379.
- The injection pump must be disassembled, cleaned, and inspected, and the necessary measurements and clearances taken. Parts found to be defective will be replaced, and the costs will be adjusted on PWGSC form 1379. The injection pump and governor must be tested.
- Install an oil temperature thermometer on the engine.
- Check the pressure dials in the wheelhouse.
- [Install a thermostat on the immersion block heater \(115v/1ph/60, 1kW\).](#)
- All parts used must be OEM, and the exchange system is accepted.
- Perform the engine commissioning and adjustments for a period of four (4) hours with a running-in oil provided by the Contractor. The Contractor must demonstrate that power output and overall operation are satisfactory and in accordance with the manufacturer's specifications. All safeguards must be checked, and the values recorded in the report.

Submit a written report indicating the different engine parameter values (RPM, TORQUE, POWER, OIL PRESSURE, WATER TEMP., EXH. TEMP., OIL TEMP., etc.).

- The Marine Safety expert and CCG representatives will be required to attend start-up and testing and must be notified within 48 hours in advance .
- After testing, conduct an oil analysis and replace the oil and oil filter. Open the dirty oil filter in the presence of the CCG representative.
- The work must be completed by April 1, 2017.
- The Contractor must perform the initial start-up of the engine aboard the vessel.
- In the spring, the technician must conduct an engine operation test for 4 hours. The engine must be put under load.

5.13.1.4 – PROOF OF PERFORMANCE

- All work must be completed to the satisfaction of the Chief Engineer.

5.13.1.5 – DELIVERABLES

- The Contractor must submit to the CCG representative three (3) copies of a full written report in PDF format on the work performed, including the clearances and measurements, and must list all the parts that were replaced.
- The following information is to be included:
 - Date of work and date of report
 - Technician name
 - Description of work performed
 - A list of materials and all parts replaced or installed

5.13.2 ANNUAL MAINTENANCE OF STARBOARD DIESEL GENERATOR ENGINE

5.13.2.1 – SCOPE

Perform the annual inspection and maintenance of the starboard diesel generator engine.

5.13.2.3 – TECHNICAL DESCRIPTION

Engine type: Perkins 4.236, 4 cylinders

Starboard: Serial number: LD20663NT743303

Engine hours: Starboard: 3037.1 hrs

The Contractor must perform the following work:

- Provide the services of an engineer for the annual maintenance of the Perkins diesel engine.
- Install an oil temperature thermometer on the engine.
- Check the pressure dials in the wheelhouse.
- [Install a thermostat on the immersion block heater](#) (115v/1ph/60, 1kW).

- The technician must be a representative authorized by the engine's manufacturer.
- The engineer must perform all upgrades and repairs recommended by the manufacturer.
- The technician must perform the work recommended by the manufacturer based on the engine hours.
- In the spring, the technician must conduct an engine operation test for 1 hour. The engine must be put under load.

5.13.2.4 – PROOF OF PERFORMANCE

- All work must be completed to the satisfaction of the Chief Engineer.

5.13.2.5 – DELIVERABLES

- The technician must submit a written report in hard copy and PDF.
- The following information is to be included:
 - Date of work and date of report
 - Technician name
 - Diagnostic of problems, if necessary
 - Description of work performed
 - A list of materials and all parts replaced or installed

5.14. POWER DISTRIBUTION

5.14.1 ELECTRICAL INSULATION TEST

5.14.1.1 – SCOPE

- Conduct insulation tests on the vessel's electrical circuits.

5.14.1.2 – REFERENCES

- List of electrical circuits on the *Saint-Ours*

5.14.1.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Conduct insulation tests on all the vessel's AC electrical circuits and record the results in the «List of electrical circuits on the *Saint-Ours*» document.
- All tests must be performed between phase and ground. For systems containing more than one phase, each phase must be tested independently.
- Always take the notes on the distribution lists into consideration to prevent damage to equipment.
- The voltages used for the insulation tests are recorded in the «List of electrical circuits on the *Saint-Ours*» document.
- For distribution circuits:
 - Disconnect all devices connected to the circuit to be tested (anything plugged into an outlet).

- All breakers on the circuit should be closed (ON) to conduct the test.
- Open (OFF) the breaker for the circuit to be tested.
- For the generators:
 - Open (OFF) the breaker for the generator.
 - Disconnect the voltage regulator and the voltage sensing unit.
- For the electric motors:
 - Open (OFF) the motor breaker.
 - Test all the phases independently downstream of the breaker (between the breaker and the motor).
 - Find and turn on the starter for the motor to be tested, and perform the test on all phases downstream of the breaker (between the starter and the motor).
- All circuits tested whose results are less than 5 Megaohms must be investigated to identify and correct the cause of the insulation loss.

5.14.1.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer and the TC inspector.

5.14.1.5 – DELIVERABLES

Report

- The Contractor must provide the Chief Engineer with two (2) paper copies of the original inspection report. The Contractor must also send an electronic copy of certificates to the Vessel Maintenance Manager.
- The report must be made with the document «List of electrical circuits on the *Saint-Ours*» digitally filled out, signed and dated by the person who performed the work.
- The report must indicate the make, model and serial number of the electrical insulation measuring device.

5.15. AUXILIARY SYSTEMS

5.15.1 ANNUAL MAINTENANCE OF THE HYDRAULIC UNIT ENGINE

5.15.1.1 – SCOPE

- Perform the annual inspection and maintenance of the hydraulic unit's diesel engine.

5.15.1.2 – REFERENCES

- Engine type: Detroit Diesel Series 53, model 5042-6000
Engine hours: 762 hrs

5.15.1.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Provide the services of an engineer for annual maintenance of the hydraulic unit's Detroit Diesel Series 53 engine.
- Supply and install an emergency stop button on the diesel engine to stop the engine locally. Currently, engine shutdown is done from the deck.
- [Install a thermostat on the immersion block heater \(115v/1ph/60, 1kW\).](#)
- The technician must be a representative authorized by the engine's manufacturer.
- The engineer must perform all upgrades and repairs recommended by the manufacturer.
- The technician must perform the work recommended by the manufacturer based on the engine hours.
- In the spring, the technician must conduct an engine operation test for 1 hour. The engine must be put under load.

5.15.1.4 – PROOF OF PERFORMANCE

- All work must be completed to the satisfaction of the Chief Engineer.

5.15.1.5 – DELIVERABLES

- The technician must submit a written report in hard copy and electronic form.
- The following information is to be included:
 - Date of work and date of report
 - Technician name
 - Diagnostic of problems, if necessary
 - Description of work performed
 - A list of materials and all parts replaced or installed

5.15.2 INSTALLATION OF COOLER ON HYDRAULIC UNIT'S OIL CIRCUIT

5.15.2.1 – SCOPE

- Install an oil cooler on the oil circuit of the crane's hydraulic unit.

5.15.2.2 – REFERENCES

- Drawing of oil cooler on the *Saint-Ours*

5.15.2.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Supply and install a tube cooler on the hydraulic oil circuit. The cooler must be 4 in. in diameter and no more than 10 in. long, with oil inlet and outlet $\frac{3}{4}$ in. in diameter and cooling water inlet and outlet $\frac{3}{4}$ or 1 in. in diameter.
- The oil piping must be screwed steel piping. One $\frac{3}{4}$ -in. union coupling, one $\frac{3}{4}$ -in. T with two (2) $\frac{3}{4}$ -in. nipples and one pipe 3 ft. long and $\frac{3}{4}$ in. in diameter must be required.

- The cooling water piping must be welded and screwed piping. One 2-inch flow control valve, two (2) 2-inch Ts, two (2) 1- to 2-inch reducer fittings and two (2) hoses $\frac{3}{4}$ or 1 in. in diameter and 3 ft. long must be required.
- In the spring, the technician must conduct an engine operation test for 1 hour to check for leaks and adjust the flow control valve.
- Apply a coat of primer (supplied by the Contractor) to the new surface.
- The necessary surplus parts will be replaced with new, OEM parts and will be addressed on form 1379.
- Welds must be carried out by a qualified welder according to CSA standards.
- For the duration of the welding work, a fire extinguisher must be kept near the work area.

5.15.1.4 – PROOF OF PERFORMANCE

- All work must be completed to the satisfaction of the Chief Engineer and the CCG representative.

5.15.1.5 – DELIVERABLES

- The technician must submit a written report in hard copy and electronic form.
- The following information is to be included:
 - Date of work and date of report
 - Description of work performed
 - A list of materials and all parts replaced or installed

5.15.3 AFTER STARBOARD AIR COMPRESSOR

5.15.3.1 – SCOPE

- Perform the five-year inspection of the after starboard air compressor.

5.15.3.2 – REFERENCES

Compressor brand: Hamworthy

- Compressor model: 2534 Type C35, Series 82517

5.15.3.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Completely overhaul the starboard air compressor. Disconnect the compressor and its motor to take them to the workshop. Take the necessary measures to protect the pipes and electrical installations during the overhaul.
- Take wear measurements of the crankshaft and its bearings. Change the non-return valves and the fluid seals on the compressor head for all stages. Identify parts that do not comply with the manufacturer's specifications or that show abnormal signs of wear, and give the details to the CCG representative. Replace these parts with new OEM parts.
- Replace the compressor oil with the oil recommended by the manufacturer. The Contractor is responsible for providing the new oil for the oil change and for disposing of the used oil in compliance with the laws and regulations in force.

- Check the condition of the motor bearings. Use a jet of compressed air to clean the motor winding. Perform a complete insulation test (Megger test) on the motor winding and mount. Replace defective parts with new parts.
- Reassemble the compressor and its motor with the new parts, install them in their place and reconnect them to their piping with new fittings. Perform tests to demonstrate that the compressor works properly once it is back in place.
- The internal inspection and tests must be done in the presence and to the complete satisfaction of the Transport Canada inspector. The Contractor is responsible for contacting Transport Canada about the inspections.
- All replaced parts must be given back to the CCG representative.
- A report must be produced outlining the measurements taken, the parts changed and the alignment between the pump and its motor, and containing any other relevant comments on the wear or general condition of the pump.

5.16. DOMESTIC SYSTEMS

5.16.1 CLEANING AND INSPECTION OF THE CENTRAL VENTILATION SYSTEM

5.16.1.1 – SCOPE

- Conduct a thorough cleaning of the ventilation system.

5.16.1.2 – REFERENCES

- *Île Saint-Ours* Ventilation 42-83-803

5.16.1.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Conduct a thorough cleaning of the ship's ventilation system using mechanical suction/pulsing/brushing (octopus) methods and a vacuum equipped with a HEPA filter.
- The ventilation system includes the following components: the central ventilation ducts for the dryer and the bathroom; heat exchangers; diffusers; and external air intake.
- Degrease the galley hood, including its fan and exhaust duct.
- The Contractor must take the necessary measures to adequately protect furniture and equipment during the work.

5.16.1.4 – PROOF OF PERFORMANCE

Inspection and certification

- All work must be completed to the satisfaction of the CCG representative.
-

5.16.1.5 – DELIVERABLES

Report

- The Contractor must provide the Chief Engineer with two (2) paper copies and one electronic copy of a report indicating the general condition of the

ventilation system before and after the work. This report must include photos of the various components of the ventilation system before and after cleaning.

5.16.2 REPLACEMENT OF VESSEL'S AIR CONDITIONING SYSTEM

5.16.2.1 – SCOPE

- Remove and replace the vessel's air conditioning unit.
Note: The technician(s) doing the work must hold a valid CCRP card, indicate its number on the report, and provide a copy of the card to the CCG representative.

5.16.2.2 – REFERENCES

- *Île Saint-Ours* Ventilation 42-83-803

5.16.2.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Disassemble and remove the existing unit. Make: Carrier. Model: 50YH036500. Serial number: T514286.
- Recover the old system's refrigerant.
- Modify the cover to install the new A/C system.
- Install the new unit of the same make and capacity as the old one, specifically 36,000 BTU/hour, with a rating of 14 SEER, R-410A refrigerant, and an electric coil for 5-kw, 230-volt heating.
- Add a section of additional filters to the unit's return vent.
- Electrically disconnect and connect the A/C unit, heating elements and thermostat.
- Modify the exhaust vents in order to connect them.
- Perform unit start-up.
- All breaks and failures must be addressed as additional work on form 1379.

5.16.2.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the CCG representative.
-

Certification

At the request of the Chief Engineer and the CCG representative, the refrigeration technician must present a valid refrigeration mechanic's certificate.

5.16.2.5 – DELIVERABLES

Report

- The Contractor must provide the Chief Engineer with two (2) paper copies and one electronic copy of a report indicating the operating condition of the air conditioning system.

5.17. DECK EQUIPMENT / VESSEL SUPPORT SYSTEMS

N/A

5.18. COMMUNICATION AND NAVIGATION SYSTEMS

N/A

5.19. INTEGRATED CONTROL SYSTEMS

N/A

6. CCGS GARDE-CÔTE 03 (C 035)

Maintenance Manager:	Email:	Office: Cell:
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6.10. SAFETY AND SECURITY EQUIPMENT

6.10.1 PORTABLE FIRE EXTINGUISHERS

6.10.1.1 – SCOPE

The Contractor must inspect all fire extinguishers and renew the certification of all extinguishers whose certification date has expired.

6.10.1.2 – REFERENCE

- *G.C. 03* – Portable fire extinguishers

6.10.1.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- An annual inspection of portable fire extinguishers must be performed. Fire extinguisher inspection and maintenance must be entrusted to a qualified representative.
- Once the maintenance has been completed, return all the fire extinguishers to the vessel and put them back in place according to the Chief Engineer's instructions.

6.10.1.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Commanding Officer, the Chief Engineer or Vessel Maintenance Manager.

Testing

- Fire extinguisher testing must be done in compliance with Transport Canada regulations.

Certification

- The Contractor must provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor must also send an electronic copy of all reports and certificates to the Vessel Maintenance Manager.

6.10.1.5 – DELIVERABLES

Drawings/reports

- The Contractor must provide the Chief Engineer with two (2) paper copies of reports and checklists that explain in detail the work and necessary modifications. The Contractor must also send an electronic copy of all reports to the Vessel Maintenance Manager.

6.10.2 FIRE DETECTION SYSTEM

6.10.2.1 – SCOPE

The purpose of this specification is to ensure that the Contractor perform the annual inspection and certification of the fire detection system.

6.10.2.2 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- The vessel is equipped with a Fire-lite MS-9050UD fire panel.
- Arrange for a visit from a TC inspector before the work begins.
- Provide accredited labor to conduct the annual inspection and certification of the fire detection system.
- The fire detection system control panel is found on the port side of the wheelhouse.
- All breaks and failures must be addressed as additional work on form 1379.
-

6.10.2.3 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer and the Vessel Maintenance Manager.

Certification

- The Contractor must provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor must also send an electronic copy of all reports and certificates to the Vessel Maintenance Manager.

6.10.2.4 – DELIVERABLES

Drawings/reports

- The Contractor must submit to the Chief Engineer a hard copy of the typed report, detailing the inspections, modifications and repairs made prior to acceptance of this item. The Contractor must also send an electronic copy of all reports and certificates to the Vessel Maintenance Manager.

6.10.3 ANNUAL INSPECTION OF FIXED FIRE SUPPRESSION SYSTEM

6.10.3.1 – SCOPE

The purpose of this specification is to perform maintenance on and certify the fixed fire suppression system on the CCGS *G.C. 03*.

The Contractor must communicate with the Chief Engineer before undertaking the work for this item. This work must be performed in conjunction with the portable fire extinguisher maintenance without reducing the fire suppression capacity aboard the vessel.

The fixed suppression system is a Kidde 2 x 75 lbs. system.

6.10.3.2 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Provide the authorized labor to perform test and inspect the vessel's CO₂ system as part of the annual inspection and certification of this system. The Chief Engineer must attend all tests.
- Aside from the following tests, the Contractor must perform all tests required by the TC inspector on site. In the estimate, the Contractor must provide the cost of testing the alarms (indicator lights and sirens) on all devices, testing ventilation closure devices, and testing slack loops and cables.
- Use air pressure to clean the pipes and pneumatic actuators and ensure that they work properly. Pipes and nozzles must be free from obstruction.
- Ensure that the alarm displays and sirens work properly. The Contractor must weigh each cylinder and record the results. At the end of the refit, the Contractor must provide the Chief Engineer with copies of all certificates.
- When the tests and inspections are completed, the Contractor must reassemble and reactivate the systems.

6.10.3.3 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer, the Vessel Maintenance Manager and the TC inspector.

Testing

- The Chief Engineer must be present for the system inspection and test.

Certification

- The Contractor must provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor must also send an electronic copy of all reports and certificates to the Vessel Maintenance Manager.

6.10.3.4 – DELIVERABLES

Drawings/reports

- The Contractor must submit to the Chief Engineer a hard copy of the typed report, detailing the inspections, modifications and repairs made prior to acceptance of this item. The Contractor must also send an electronic copy of all reports and certificates to the Vessel Maintenance Manager.

6.11. HULL AND STRUCTURE

6.11.1 RESTORATION OF ENGINE ROOM AIR DUCT

6.11.1.1 – SCOPE

Restore the 360-degree rotation of the two (2) air supply ducts in the engine room.

6.11.1.2 – REFERENCES

- Photos



6.11.1.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Disassemble the air supply ducts in the engine room to locate the jam.
- Make the necessary changes so that the air supply ducts can rotate 360 degrees.
- Apply one coat of primer to all affected duct surfaces.

6.11.1.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer and the Vessel Maintenance Manager.

6.11.2 WELDING OF WATER PIPE SUPPORT BRACKETS

6.11.2.1 – SCOPE

Make and install a bracket for a sea water pipe 1 in. in diameter.

Make and install four (4) brackets for drinking water pipes ½ in. in diameter.

6.11.2.2 – REFERENCES

- N/A

6.11.2.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Make and weld a support bracket for a pipe 1 in. in diameter on the starboard side supplying sea water for cooling of the main engine generator.
- Make and weld four (4) support brackets for two (2) copper drinking water pipes ½ in. in diameter.
- Welds must be carried out by a qualified welder according to the CSA W59 standard.
- For the duration of the welding work, a fire extinguisher must be kept near the work area.
- Apply a coat of red primer to all sections where the paint was damaged by the work, as well as to all weld beads. Mechanically clean floor sections damaged by the work before applying the primer. Primer will be supplied by the Contractor.

6.11.2.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer and the Vessel Maintenance Manager.

6.11.3 REPAIR OF FUEL TANKS

6.11.3.1 – SCOPE

Replace a pipe between the forward and aft starboard tanks.

6.11.3.2 – REFERENCES

- N/A

6.11.3.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Replace the pipe connecting the forward fuel tank to the aft fuel tank. The copper pipe is ½ in. in diameter and 35 ft. long.
- The Contractor must make sure that the bilges are free of combustibles and other hazards.
- The room must be gas-free to weld the brackets.
- Two (2) grommets must be replaced.
- The entire pipe is made of copper and ½ in. in diameter.
- Insulation near places where welding work will be performed must be removed before work begins and replaced when the work ends, to avoid damaging the insulation. Seams produced by cutting out insulation must be closed with adhesive aluminum tape.
- The Contractor must conduct leak testing on the pipe.
- Welding work must be done by a qualified welder.
- A primer must be applied to all metal surfaces affected by the work. Primer will be supplied by the Contractor.

6.11.3.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer, the Vessel Maintenance Manager and the TC inspector.

6.11.4 REPAIR OF PORT GALLEY AND STARBOARD WASHROOM MANHOLES

6.11.4.1 – SCOPE

Repair two (2) manholes on the deck, port and starboard sides. The port manhole is for the galley and the starboard manhole is for the washroom.

6.11.4.2 – REFERENCES

- Photos



6.11.4.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Replace the handle bushings; there are three bushings per manhole.
- The Contractor must make sure that the two (2) manholes are watertight.
- A primer must be applied to all metal surfaces affected by the work. Primer will be supplied by the Contractor.

6.11.4.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer, the Vessel Maintenance Manager and the TC inspector.

6.11.5 REPLACEMENT OF FLOORS IN PORT GALLEY AND STARBOARD WASHROOM

6.11.5.1 – SCOPE

Clean and paint underneath the floors on the port and starboard sides.

Redo the floors in the port galley and starboard washroom and underneath the dark water system.

6.11.5.2 – REFERENCES

➤ Photos



6.11.5.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Remove and dispose of the existing flooring.
- Conduct a thorough cleaning of the surfaces underneath the floors, which includes removing rust by brushing.
- Apply a coat of primer (supplied by the Contractor) to a 42-sq. ft. area on the port side and a 42-sq. ft. area on the starboard side.
- The Contractor must redo the edges and base of the floor. The edges must be done with aluminum or steel angle irons $\frac{3}{4}$ in. x. $\frac{3}{4}$ in. and the floor must be made of a $\frac{1}{4}$ -in. profiled aluminum sheet.
- A total of 42 sq. ft. of flooring must be redone on both the port and starboard sides.
- A primer must be applied to all metal surfaces affected by the work. Primer will be supplied by the Contractor.
- The Contractor must remove two (2) walls to access the black water system. The first wall measures 70 in. x 28 in. and the other measures 58 in. x 22 in.
- The Contractor must conduct a thorough cleaning of the surfaces underneath the black water system, which includes removing rust by brushing.
- Apply a coat of primer, which will be supplied by the Contractor.
- The section to be cleaned and coated with primer is about 10 sq. ft.
- The Contractor must replace the two (2) walls.

6.11.5.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer and the Vessel Maintenance Manager.

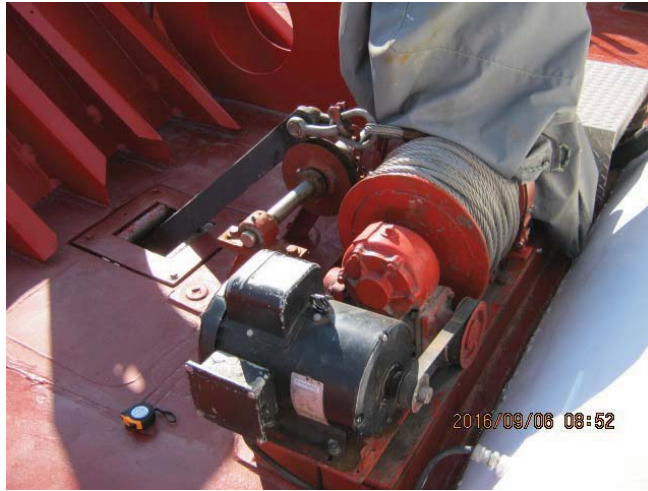
6.11.5 REPLACEMENT OF STEEL SHEET UNDER WINDLASS

6.11.5.1 – SCOPE

Replace the steel sheet underneath the windlass on the foredeck.

6.11.5.2 – REFERENCES

- Photos



6.11.5.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Remove the windlass and anchor.
- Cut out the damaged steel sheet that is 5 ft. long, 3 ft. wide and ¼ in. thick and located underneath the windlass, also removing the two (2) angle clips for the windlass.
- Prepare the surface and install the new steel sheet.
- Conduct a thorough cleaning of the floor surface underneath the windlass and apply a coat of primer (supplied by the Contractor) to the new surface.
- Replace the windlass.
- Welds must be carried out by a qualified welder according to the CSA W59 standard.
- A panel on the starboard side held by four (4) screws must be removed to see if there is a fire.
- For the duration of the welding work, a fire extinguisher must be kept near the work area.
- The Contractor must replace the panel on the starboard side upon completion of the work.

6.11.5.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer, the Vessel Maintenance Manager and the TC inspector.

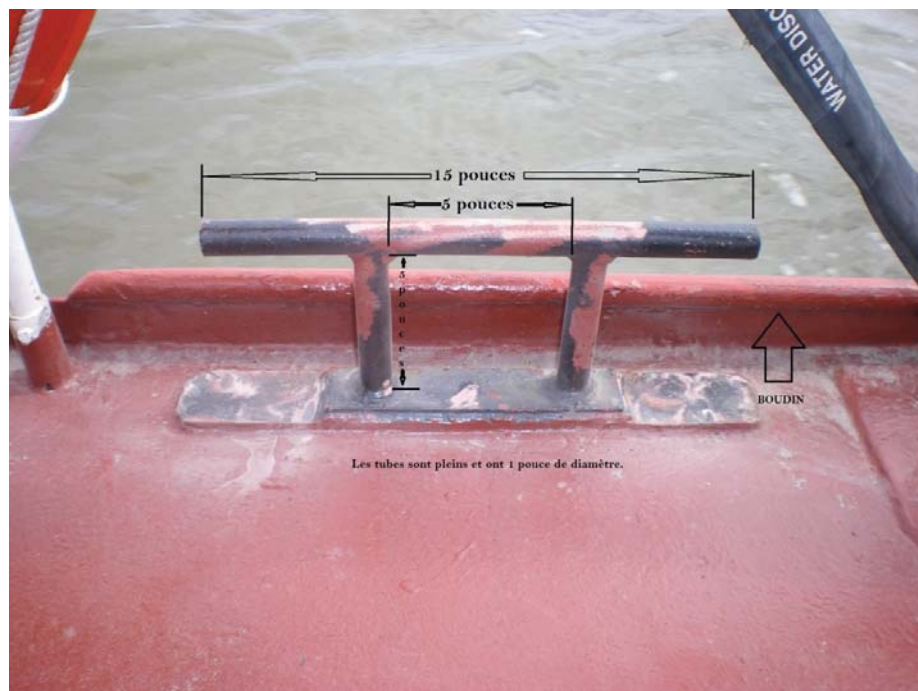
6.11.6 REPLACEMENT OF CLEAT AND REPAIR OF SPONSONS

6.11.6.1 – SCOPE

- Replace the cleat on the aft deck, port side.
- Repair the two (2) sponsons on the aft deck above the engine exhausts.

6.11.6.2 – REFERENCES

- Photos



6.11.6.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Make a new cleat and replace the one on the aft deck, port side.
- Prepare the surface and install the new cleat.
- Conduct a thorough cleaning of the surface and apply a coat of primer (supplied by the Contractor) to the new surface.
- Repair, by welding, the two sponsons on the aft deck, above the exhaust pipes.
- Welds must be carried out by a qualified welder according to the CSA W59 standard.
- For the duration of the welding work, a fire extinguisher must be kept near the work area.

6.11.6.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer and the Vessel Maintenance Manager.

6.12. PROPULSION AND MANOEUVRING SYSTEMS

6.12.1 FIVE-YEAR MAINTENANCE OF PORT PROPULSION DIESEL ENGINE

6.12.1.1 – SCOPE

- Perform the five-year inspection of the port main diesel engine.
- The Contractor must obtain the services of a firm recognized and certified by Caterpillar to overhaul the port engine. The Contractor must unbolt the engine from its base, take it to the shop for repairs and, upon completion of the work, deliver it to the same place, specifically:
Fisheries and Oceans Canada/Coast Guard
15 du Prince Street
Sorel, QC
J3P 4J4
- All work must be performed according to the manufacturer's procedures and specifications. Once the engine is fully dismantled, all parts must be cleaned and inspected, and the necessary measurements and clearances taken to allow for inspection by the Marine Safety expert and the CCG and PWGSC representatives. The engine must then be reassembled.
- The Contractor is responsible for contacting the CCG representatives and Marine Safety expert within the required time.

6.12.1.2 – REFERENCES

- Caterpillar *G.C. 03* manual
- Caterpillar engine maintenance recommendations

6.12.1.3 – TECHNICAL DESCRIPTION

Make: Caterpillar
Model: 3306B
Arrangement no.: 1W3870
Serial no.: 84 Z 01145
OT specification no.: OT 4229

The Contractor must perform the following work:

- All work must be performed according to the manufacturer's procedures and specifications. Once the engine is fully dismantled, all parts must be cleaned and inspected, and the necessary measurements and clearances taken to allow for inspection by the Marine Safety expert and the CCG and PWGSC representatives. The engine must then be reassembled.

-
- The Contractor is responsible for contacting the CCG and PWGSC representatives and Marine Safety expert within the required time.
 - Refurbish the following components:
 - a) The cylinder heads, including the injectors
 - b) The lubricating oil pump
 - c) The turbo
 - d) The fresh water pump
 - e) The Jabsco salt water pump
 - f) The six (6) sets of cylinders, including the connecting rods, pistons, piston rings and liners
 - Clean, inspect and perform a hydrostatic test of the oil and air coolers.
 - Supply and replace with new ones all gaskets, packings and hoses.
 - Supply new parts and replace the following components:
 - a) Crankshaft, camshaft and gear friction and thrust bearings
 - b) Front and rear crankshaft seals
 - c) Connecting rod bearings
 - d) Temperature regulator
 - e) Expansion tank cap
 - f) Necessary fastenings
 - g) All filters (fuel, oil and air)
 - h) Lubricating oil
 - i) Fuel priming pump (transfer)
 - j) Cooling water high temperature sensor
 - k) Low oil pressure sensor
 - If other mechanical parts need to be replaced, the cost of parts must be adjusted on form 1379.
 - The injection pump must be disassembled, cleaned, and inspected, and the necessary measurements and clearances taken. Parts found to be defective will be replaced, and the costs will be adjusted on PWGSC form 1379. The injection pump and governor must be tested.
 - All parts used must be OEM, and the exchange system is accepted.
 - Perform the engine commissioning and adjustments on a dynamometer for a period of four (4) hours with a running-in oil provided by the Contractor. The Contractor must demonstrate that power output and overall operation are satisfactory and in accordance with the manufacturer's specifications. All safeguards must be checked, and the values recorded in the report. Submit a written report indicating the different engine parameter values (RPM, TORQUE, POWER, OIL PRESSURE, WATER TEMP., EXH. TEMP., OIL TEMP., etc.) during the dynamometer test.
 - The Marine Safety expert and CCG and PWGSC representatives will be required to attend start-up and testing and must be notified within the required time.
 - After testing, conduct an oil analysis and replace the oil and oil filter. Open the dirty oil filter in the presence of the CCG representative.
 - Apply a coat of paint prior to delivery.
 - Properly pack the engine prior to delivery and storage.
 - The work must be completed by April 1, 2017.
-

- Once the Contractor has reinstalled the engine on board, the engine/transmission must be properly aligned to the propeller shaft.
- The Contractor must perform the initial start-up of the engine aboard the vessel.
- In the spring, the technician must conduct an engine operation test for 1 hour. The engine must be put under load.

6.12.1.4 – PROOF OF PERFORMANCE

- All work must be completed to the satisfaction of the Chief Engineer.

6.12.1.5 – DELIVERABLES

- The Contractor must submit to the CCG representative three (3) copies of a full written report in PDF format on the work performed, including the clearances and measurements, and must list all the parts that were replaced.
- The following information is to be included:
 - Date of work and date of report
 - Technician name
 - Description of work performed
 - A list of materials and all parts replaced or installed

6.12.2 MOTOR & HYDRAULIC PUMP FOR PORT STEERING GEAR

6.12.2.1 – SCOPE

- Disassemble the hydraulic pump of the steering gear to perform the five-year inspection.

6.12.2.2 – REFERENCES

Hydraulic pump:

- Make: MacMillin
- Model: PVB5 RSY 20CC11, E8.7J

Electric motor:

Make:

Model: 215TZ484, 60 Hz, 7.5 HP, 1745 rpm, 208-230 volts, 36 Amps, SF 1.15

6.12.2.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Electrically isolate the pump motor for the duration of the work.
- Disassemble the pump and the electric motor to inspect the parts.
- Disconnect the pump and its motor. Take the necessary measures to protect the pipes and electrical installations during the overhaul.
- Remove the coupling between the motor and the pump, check it for wear, and replace it.

- Take the pump wear measurements. Identify parts that do not comply with the manufacturer's specifications or that show abnormal signs of wear, and give the details to the CCG representative. Defective parts must be replaced with new, OEM parts and must be addressed on form 1379.
- Check the condition of the motor bearings. Use a jet of compressed air to clean the motor winding. Perform a complete insulation test (Megger test) on the motor winding and mount. Defective parts must be replaced with new, OEM parts and must be addressed on form 1379.
- Reassemble the pump and its motor, install them in their proper place and reconnect them to their piping with the new fittings. Align the pump and its motor. Perform 15-minute tests to demonstrate that the pump works properly once it is back in place. The tests must show that the pump generates the required pressure.

6.12.2.4 – PROOF OF PERFORMANCE

Report

- The Contractor must submit to the Chief Engineer a report detailing the measurements during alignment of the engine and the pump. An electronic copy of the report must be sent to the CCG representative.

6.13. VESSEL'S GENERATION OF ELECTRICAL POWER

N/A

6.14. POWER DISTRIBUTION

6.14.1 – ELECTRICAL INSULATION TEST

6.14.1.1 – SCOPE

- Conduct insulation tests on the vessel's electrical circuits.

6.14.1.2 – REFERENCES

- List of electrical circuits on the *G.C. 03*

6.14.1.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Conduct insulation tests on all the vessel's AC electrical circuits and record the results in the «List of electrical circuits on the *G.C. 03*» document.
- All tests must be performed between phase and ground. For systems containing more than one phase, each phase must be tested independently.
- Always take the notes on the distribution lists into consideration to prevent damage to equipment. Especially navigation equipment.
- The voltages used for the insulation tests are recorded in the «List of electrical circuits on the *G.C. 03*» document.
- For 120 Vac distribution circuits:

- Disconnect all devices connected to the circuit to be tested (anything plugged into an outlet).
- All breakers on the circuit should be closed (ON) to conduct the test.
- Open (OFF) the breaker for the circuit to be tested.
- After the tests, return the circuit breakers to their original states.
- For the generators:
 - Open (OFF) the breaker for the generator.
 - Remove the fuses for ground leak detection lights.
 - Disconnect the voltage regulator.
 - Disconnect the voltage sensing unit, if necessary.
- For the electric motors:
 - Open (OFF) the motor breaker.
 - Test all the phases independently downstream of the breaker (between the breaker and the motor).
 - Find and turn on the starter for the motor to be tested, and perform the test on all phases downstream of the breaker, secondary to the contact switch (between the starter and the motor).
 - If anomalies are observed in the starter, they must be noted so that corrections can be made.
- All circuits tested whose results are less than 5 Megaohms must be investigated to identify and correct the cause of the insulation loss.

6.14.1.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer, the Vessel Maintenance Manager and the TC inspector.

6.14.1.5 – DELIVERABLES

Report

- The Contractor must provide the Chief Engineer with two (2) paper copies of the original inspection report. The Contractor must also send an electronic copy of certificates to the Vessel Maintenance Manager.
- The report must be made with the document «List of electrical circuits on the *G.C. 03*» digitally filled out, signed and dated by the person who performed the work.
- The report must indicate the make, model and serial number of the electrical insulation measuring device, as well as its certification/calibration.

6.15. AUXILIARY SYSTEMS

6.15.1 PORT ELECTRIC BILGE PUMP

6.15.1.1 – SCOPE

- Inspect, test and certify the port electric bilge pump.

6.15.1.2 – TECHNICAL DESCRIPTION

Bilge pump make: Flomax

Bilge pump model: Flomax 8, 2 in. in diameter

The Contractor must perform the following work:

- Disassemble and inspect the bilge pump.
- Padlock the pump motor power breaker. Disconnect the pump and its motor. Take the necessary measures to protect the pipes and electrical installations during the overhaul.
- Take the pump wear measurements. Identify parts that do not comply with the manufacturer's specifications or that show abnormal signs of wear, and give the details to the CCG representative. Defective parts must be replaced with new, OEM parts and must be addressed on form 1379.
- Check the condition of the motor bearings. Use a jet of compressed air to clean the motor winding. Perform a complete insulation test (Megger test) on the motor winding and mount. Defective parts must be replaced with new, OEM parts and must be addressed on form 1379.
- Reassemble the pump and its motor, install them in their proper place and reconnect them to their piping with the new fittings. Align the pump and its motor. Perform 15-minute tests to demonstrate that the pump works properly once it is back in place. The tests must show that the pump generates the required pressure.

6.15.1.3 – PROOF OF PERFORMANCE

Inspection and certification

- The internal inspection and tests must be done in the presence and to the complete satisfaction of the CCG and the TC inspector. The Contractor is responsible for contacting TC about the inspections.
- All replaced parts must be given back to the CCG representative.

6.15.1.4 – DELIVERABLES

Report

- The Contractor must provide the Chief Engineer with two (2) paper copies and one electronic copy of a report outlining the measurements taken, the parts changed and the alignment between the pump and its motor, along with any other relevant comments on the wear or general condition of the pump.

6.15.2 STARBOARD ELECTRIC BILGE PUMP

6.15.2.1 – SCOPE

- Inspect, test and certify the starboard electric bilge pump.

6.15.2.2 – TECHNICAL DESCRIPTION

Bilge pump make: Flomax

Bilge pump model: Flomax 8, 2 in. in diameter

The Contractor must perform the following work:

- Disassemble and inspect the bilge pump.
- Padlock the pump motor power breaker. Disconnect the pump and its motor. Take the necessary measures to protect the pipes and electrical installations during the overhaul.
- Take the pump wear measurements. Identify parts that do not comply with the manufacturer's specifications or that show abnormal signs of wear, and give the details to the CCG representative. Defective parts must be replaced with new, OEM parts and must be addressed on form 1379.
- Check the condition of the motor bearings. Use a jet of compressed air to clean the motor winding. Perform a complete insulation test (Megger test) on the motor winding and mount. Defective parts must be replaced with new, OEM parts and must be addressed on form 1379.
- Reassemble the pump and its motor, install them in their proper place and reconnect them to their piping with the new fittings. Align the pump and its motor. Perform 15-minute tests to demonstrate that the pump works properly once it is back in place. The tests must show that the pump generates the required pressure.

6.15.2.3 – PROOF OF PERFORMANCE

Inspection and certification

- The internal inspection and tests must be done in the presence and to the complete satisfaction of the CCG and the TC inspector. The Contractor is responsible for contacting TC about the inspections.
- All replaced parts must be given back to the CCG representative.

6.15.2.4 – DELIVERABLES

Report

- The Contractor must provide the Chief Engineer with two (2) paper copies and one electronic copy of a report outlining the measurements taken, the parts changed and the alignment between the pump and its motor, along with any other relevant comments on the wear or general condition of the pump.

6.16. DOMESTIC SYSTEMS

N/A

6.17. DECK EQUIPMENT / VESSEL SUPPORT SYSTEMS

6.17.1 REPAIR OF OIL LEAK IN PORT CAPSTAN

6.17.1.1 – SCOPE

- Repair the oil leak in the port capstan.

6.17.1.2 – REFERENCES

- Photos
- Make: Ideal Windlass; model B; series G375.

6.17.1.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Provide the services of an engineer to disassemble the port capstan.
- The seals and gaskets on the shaft are to be changed if necessary.
- The oil in the capstan is also to be changed; the oil can be 75W90 gear oil, and the gearbox contains 4 litres of oil.
- The engineer must perform all upgrades.

6.17.1.4 – PROOF OF PERFORMANCE

- All work must be completed to the satisfaction of the Chief Engineer.

6.17.1.5 – DELIVERABLES

- The technician must submit a written report in hard copy and electronic form.
- The following information is to be included:
 - Date of work and date of report
 - Technician name
 - Diagnostic of problems, if necessary
 - Description of work performed

6.17.2 FIVE-YEAR INSPECTION OF WINDLASS

6.17.2.1 – SCOPE

- Perform the five-year inspection of the vessel's windlass along with the steel cable and anchor.

6.17.2.2 – REFERENCES

- Photos
- Make: Broken Arrow; model: M3C-141-B

6.17.2.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Provide the services of an engineer for the maintenance of the windlass.

- The steel cable and anchor must be removed to perform the inspection.
- Disassemble the windlass.
- Check the condition of the brake.
- Check the clutch and the range of the brake.
- Perform lubrication of the windlass.
- The oil in the windlass gearbox is also to be changed; the oil can be 75W90 gear oil, and the gearbox contains 4 litres of oil.
- Check the condition of the motor bearings. Use a jet of compressed air to clean the motor winding. Perform a complete insulation test (Megger test) on the motor winding and mount. Defective parts must be replaced with new, OEM parts and must be addressed on form 1379.
- Change the motor belt.
- Reassemble and replace the windlass.
- The Contractor must perform all upgrades.

6.17.2.4 – PROOF OF PERFORMANCE

- All work must be completed to the satisfaction of the Chief Engineer.

Inspection and certification

- The internal inspection and tests must be done in the presence and to the complete satisfaction of the CCG and the TC inspector. The Contractor is responsible for contacting TC about the inspections.
- All replaced parts must be given back to the CCG representative.
-

6.17.2.5 – DELIVERABLES

- The technician must submit a written report in hard copy and electronic form.
- The following information is to be included:
 - Date of work and date of report
 - Technician name
 - Diagnostic of problems, if necessary
 - Description of work performed

6.18. COMMUNICATION AND NAVIGATION SYSTEMS

N/A

6.19. INTEGRATED CONTROL SYSTEMS

N/A

7. CCGS <i>F.C.G. SMITH</i> (F 005)		
Maintenance Manager:	Email:	Office: Cell:

7.10. SAFETY AND SECURITY EQUIPMENT

7.10.1 INSPECTION OF PORTABLE AND GALLEY FIRE EXTINGUISHERS

7.10.1.1 – SCOPE

- The Contractor must inspect all fire extinguishers and renew the certification of all extinguishers whose certification date has expired.

7.10.1.2 – REFERENCE

- *F.C.G. SMITH* – Portable fire extinguishers

7.10.1.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- An annual inspection of portable and fixed fire extinguishers in the galley must be performed. Fire extinguisher inspection and maintenance must be entrusted to a qualified representative.
- Remove the fire extinguishers in a sequence such that the number of fire extinguishers off the vessel is never more than a third of those that are on board. The Chief Engineer will determine the order in which the fire extinguishers must leave the vessel.
- Include the price of preventive maintenance and maintenance, hydrostatic testing, refilling, and annual inspection according to the information found in the table.
- Once the maintenance has been completed, return all the fire extinguishers to the vessel and put them back in place according to the Chief Engineer's instructions.

7.10.1.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer and the TC inspector.

Testing

- Fire extinguisher testing must be done in compliance with Transport Canada regulations.

Certification

- The Contractor must provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor must also send an electronic copy of all reports and certificates to the Vessel Maintenance Manager.

7.10.1.5 – DELIVERABLES

Drawings/reports

- The Contractor must provide the Chief Engineer with two (2) paper copies of reports and checklists that explain in detail the work and necessary modifications. The Contractor must also send an electronic copy of all reports to the Vessel Maintenance Manager.

7.10.2 ANNUAL INSPECTION OF FIXED FIRE SUPPRESSION SYSTEM

7.10.2.1 – SCOPE

- The purpose of this specification is to perform maintenance on and certify the fixed fire suppression system on the CCGS *F.C.G. Smith*.
- The Contractor must communicate with the Chief Engineer before undertaking the work for this item. This work must be performed in conjunction with the portable fire extinguisher maintenance without reducing the fire suppression capacity aboard the vessel.
- The fixed fire suppression system is a Sapphire Novec 1230 system.

7.10.2.2 – REFERENCES

RM-3364 - 209261 Bâtiment Smith 30x36

7.10.2.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- The Contractor must provide authorized labour to test and inspect the vessel's Novec 1230 system as part of the annual inspection and certification of this system. The Chief Engineer must attend all tests.
- Aside from the following tests, the Contractor must perform all tests required by the TC inspector on site. In the estimate, the Contractor must provide the cost of testing the alarms (indicator lights and sirens) on all devices, testing the nitrogen-releasing cylinders, testing ventilation closure devices, and testing slack loops and cables.
- The Contractor must use air pressure to clean the pipes and pneumatic actuators and ensure that they work properly. Pipes and nozzles must be free from obstruction.
- The Contractor must ensure that the alarm displays and sirens work properly. The Contractor must weigh each cylinder and record the results. At the end of the refit, the Contractor must provide the Chief Engineer with copies of all certificates.
- When the tests and inspections are completed, the Contractor must reassemble and reactivate the systems.

7.10.2.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer, the Vessel Maintenance Manager and the TC inspector.

Testing

- The Chief Engineer must be present for the system inspection and test.

Certification

- The Contractor must provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor must also send an electronic copy of certificates to the Vessel Maintenance Manager.

7.10.2.5 – DELIVERABLES

Drawings/reports

- The Contractor must submit to the Chief Engineer a hard copy of the typed report, detailing the inspections, modifications and repairs made prior to acceptance of this item. The Contractor must also send an electronic copy of the report to the Vessel Maintenance Manager.

7.10.3 FIRE DETECTION SYSTEM

7.10.3.1 – SCOPE

The purpose of this specification is to perform the annual inspection and certification of the fire detection system.

7.10.3.2 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- The vessel is equipped with a Notifier AFP200 fire panel.
- Arrange for a visit from a TC inspector before the work begins.
- Provide accredited labor to conduct the annual inspection and certification of the fire detection system.
- The fire detection control panel is located in the wheelhouse.
- All breaks and failures must be addressed as additional work on form 1379.

7.10.3.3 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer and the Vessel Maintenance Manager.

Certification

- The Contractor must provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor must also send an electronic copy of all reports and certificates to the Vessel Maintenance Manager.

7.10.3.4 – DELIVERABLES

Drawings/reports

- The Contractor must submit to the Chief Engineer a hard copy of the typed report, detailing the inspections, modifications and repairs made prior to acceptance of this item. The Contractor must also send an electronic copy of all reports and certificates to the Vessel Maintenance Manager.

7.10.4 FIVE-YEAR INSPECTION OF LIFEBOAT DAVIT

7.10.4.1 – SCOPE

This specification covers the five-year inspection and certification of the lifeboat's davit and its hoisting device.

7.10.4.2 – TECHNICAL DESCRIPTION

Davit make: Davit international
Model: D-CR. 15/4.5

The Contractor must perform the following work:

Provide certified labour to perform the five-year inspection and certification of the davit and its integrated hoisting device.

The davit is on the starboard side on top of the wheelhouse.

The work is as follows:

- Remove the cable from the drum.
- Disassemble the pulley and the pin at the end of the mast (a magnetic particle or liquid penetrant inspection of the pin will be done, and the pulley will be inspected and measured to determine the extent of wear).
- Open the worm gear box and the winch box and replace the brake bands. Clean all components, remove the old oil, and scrape off any rust in the box. Apply a coat of primer to all bare surfaces if necessary.
 - The fastening device between the davit and the Zodiac must be sent for certification to a specialized firm (provide test certificate).
 - All limit switches and release controls must be inspected.
 - After inspection, replace the oils and close everything back up using new seals and packings.
 - The tank supplying oil to the Zodiac's overflow mechanism must be emptied of its oil and cleaned. It must be inspected by a CCG representative (refill with new oil) (30-litre capacity).
 - All hoses for the hydraulic oil must be replaced.
 - At this stage, a TC inspector must come to check the condition of the parts. If parts need to be machined or replaced, the work or purchase must be negotiated as extra work or an additional purchase and addressed as such on PWGSC form 1379. If parts need to be replaced, the Contractor must supply them.
 - Once all the davit parts have been put back into place, the Contractor must conduct a load test at 110% in the presence of a TC inspector.
 - Places where the painting has been damaged by work (such as hot work), must be repainted.
 - The Contractor is responsible for contacting the TC inspector about the component inspection.

7.10.4.3 – PROOF OF PERFORMANCE

Inspection

All work must be completed to the satisfaction of the Chief Engineer and the TC inspector.

Certification

The Contractor must provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor must also send an electronic copy of certificates to the Vessel Maintenance Manager.

7.10.4.4 – DELIVERABLES

Drawings/reports

The Contractor must submit to the Chief Engineer one (1) hard copy of the typed report, detailing the inspections, modifications and repairs made, prior to acceptance of this item. The Contractor must also send an electronic copy of the report to the Vessel Maintenance Manager.

7.10.5 INSTALLATION OF RETURN PIPES ON TWO (2) CRANES

7.10.5.1 – SCOPE

This specification covers the installation of two (2) oil return pipes on the hydraulic tank of the two (2) cranes.

7.10.5.2 – TECHNICAL DESCRIPTION

Starboard telescopic crane; make: Heila; model: HLM-7-2S
Port telescopic crane; make: HMF; model: M111-K2

The Contractor must perform the following work:

The Contractor must provide certified labour to install two (2) return pipes, one on each crane.

The work is as follows:

- Pierce and weld six (6) grommets for the ½-in. steel piping.
- Weld brackets onto the three (3) legs and attach the pipes.
- Install the steel return piping, ½ in. in diameter and 120 ft. long, for the two (2) cranes. The Contractor must ensure that the piping is very clean.
- Supply four (4) hydraulic hoses that are ½ in. in diameter and about 3 ft. long.
- The cover must be disassembled to drill and tap holes in and install ½-in. adapters to connect the cranes' oil return pipes.
- The Chief Engineer will tell the Contractor where the piping connections will be connected.
- Apply a coat of red primer to all sections where the paint was damaged by the work, as well as to all weld beads. Mechanically clean floor, wall or ceiling sections damaged by the work before applying the primer. Primer will be supplied by the Contractor.

7.10.5.3 – PROOF OF PERFORMANCE

Inspection

All work must be completed to the satisfaction of the Chief Engineer.

Certification

The Contractor must provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor must also send an electronic copy of certificates to the Vessel Maintenance Manager.

7.10.5.4 – DELIVERABLES

Drawings/reports

The Contractor must submit to the Chief Engineer one (1) hard copy of the typed report, detailing the inspections, modifications and repairs made, prior to acceptance of this item. The Contractor must also send an electronic copy of the report to the Vessel Maintenance Manager.

7.11. HULL AND STRUCTURE

7.11.1 REPLACEMENT OF WHEELHOUSE WINDOW

7.11.1.1 – SCOPE

- Supply and replace the port window on the front of the wheelhouse.

7.11.1.2 – REFERENCES

- Photo



7.11.1.3 – TECHNICAL DESCRIPTION

- The Contractor must supply and replace the port window on the front of the wheelhouse.
- It will be responsible for taking measurements and ordering windows of the same dimensions and same type.

- It must remove the old window and clean the edges and the entire surface of the port window.
- The fastening edges must have to be checked for damage and refurbished if necessary.
- The damaged bolts are also to be refurbished.
- A leak test must be conducted upon completion of the work

7.11.1.4 – PROOF OF PERFORMANCE

Inspection

- All work must be approved by the TA and MSO.
- All work must be done to the satisfaction of the CCG representative.
- Schedule an inspection at each step of the process. The Contractor must notify the CCG representative in sufficient time to allow him or her to reach the site.

Testing

- Conduct a leak test upon completion of the work.

DELIVERABLES

- The Contractor must submit to the TA two paper copies and one electronic copy of window certificates, tests and reports no later than five (5) days after completing the work contracted. All dimensional measurements and the installation procedure must be recorded in the report.

7.12. PROPULSION AND MANOEUVRING SYSTEMS

N/A

7.13. VESSEL'S GENERATION OF ELECTRICAL POWER

N/A

7.14. POWER DISTRIBUTION

7.14.1 – ELECTRICAL INSULATION TEST

7.14.1.1 – SCOPE

- Conduct insulation tests on the vessel's A/C electrical circuits as required by TC regulations for vessels over 20 years old.

7.14.1.2 – REFERENCES

- List of electrical circuits on the *F.C.G. Smith*

7.14.1.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Conduct insulation tests on all the vessel's AC electrical circuits and record the results in the «List of electrical circuits on the *F.C.G. Smith*» document.
- All tests must be performed between phase and ground. For systems containing more than one phase, each phase must be tested independently.
- Always take the notes on the distribution lists into consideration to prevent damage to equipment.
- The voltages used for the insulation tests are recorded in the «List of electrical circuits on the *F.C.G. Smith*» document.
- For distribution circuits:
 - Disconnect all devices connected to the circuit to be tested (anything plugged into an outlet).
 - All breakers on the circuit should be closed (ON) to conduct the test.
 - Open (OFF) the breaker for the circuit to be tested.
- For the generators:
 - Open (OFF) the breaker for the generator.
 - Disconnect the voltage regulator.
- For the electric motors:
 - Open (OFF) the motor breaker.
 - Test all the phases independently downstream of the breaker (between the breaker and the motor).
 - Find and turn on the starter for the motor to be tested, and perform the test on all phases downstream of the breaker (between the starter and the motor).
- All circuits tested whose results are less than 5 Megaohms must be investigated to identify and correct the cause of the insulation loss.

7.14.1.4 – PROOF OF PERFORMANCE

Inspection

- All work must be completed to the satisfaction of the Chief Engineer, the Vessel Maintenance Manager and the TC inspector.

7.14.1.5 – DELIVERABLES

Report

- The Contractor must provide the Chief Engineer with two (2) paper copies of the original inspection report. The Contractor must also send an electronic copy of certificates to the Vessel Maintenance Manager.
- The report must be made with the document «List of electrical circuits on the *F.C.G. Smith*» digitally filled out, signed and dated by the person who performed the work.
- The report must indicate the make, model and serial number of the device used to perform the electrical insulation tests.

7.15. AUXILIARY SYSTEMS

N/A

7.16. DOMESTIC SYSTEMS

7.16.1 CLEANING AND INSPECTION OF THE CENTRAL VENTILATION SYSTEM

7.16.1.1 – SCOPE

- Conduct a thorough cleaning of the ventilation system.

7.16.1.2 – REFERENCES

- *F.C.G. Smith* Gen. arrgt. 45009

7.16.1.3 – TECHNICAL DESCRIPTION

The Contractor must perform the following work:

- Conduct a thorough cleaning of the ship's ventilation system using mechanical suction/pulsing/brushing (octopus) methods and a vacuum equipped with a HEPA filter.
- The ventilation system includes the following components: the central ventilation ducts for the dryer and the bathroom; heat exchangers; diffusers; and external air intake.
- Degrease the galley hood, including its fan and exhaust duct.
- Take the necessary measures to adequately protect furniture and equipment during the work.

7.16.1.4 – PROOF OF PERFORMANCE

Inspection and certification

- All work must be completed to the satisfaction of the CCG representative.

7.16.1.5 – DELIVERABLES

Report

- The Contractor must provide the Chief Engineer with two (2) paper copies and one electronic copy of a report indicating the general condition of the ventilation system before and after the work. This report must include photos of the various components of the ventilation system before and after cleaning.

7.16.2 POTABLE WATER TANKS

7.16.2.1 SCOPE

- The two fresh water tanks, port and starboard, must be cleaned, inspected and the tanks coating must be touched up.

- The work must meet Health Canada Guidelines for Canadian Drinking water Quality.
- The tanks are of a 5.25 cubic meter each.
- Total area of a tank: 16 square meters.

7.16.2.2 REFERENCE

The existing liner is International Paint Interline 925 this product must be used for repairs.

Drawings

Drawing number	Description
Dwg 45009	Tank Arrangement and Capacity plan
Dwg # 45086	Sanitary Fresh Water system

Manual

7.A.12 Fleet Safety manual Section 7.A.12- Potable Water Quality
http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/sum_guide-res_recom/index-eng.php: Health
Canada Guidelines for Canadian Drinking water Quality
Interline 925 Application Guidelines Potable Water Tanks Interline 925

7.16.2.3 TECHNICAL DESCRIPTION

The Contractor must perform the following work:

The existing liner is International Paint Interline 925 this product must be used for repairs.

- Drain and open the water tanks. The tanks must be vented and certified safe for entry.
- The tanks must be pressure washed and wiped clean. The contractor must allow for 100 Liters of liquid waste, not including the cleaning media used.
- All the internal tank suction must be cleaned. The striking plate under the sounding tube must be inspected. The contractor must ensure that all vents, suction and filling lines are clear.
- The contractor must utilize the services of the paint manufacturer's Representative (PMR) to advise on the surface preparation and coating application as per the attached International Paint Q.C. document: Application Guidelines Potable Water Tanks, Interline 925. Every precaution must be taken to ensure there is no solvent added, to avoid Ethylbenzene contamination.
- The contractor must quote on preparation and repair of 2 m² total in 10 distinct areas, to be power tooled to SSPC-SP11, and the edges to be feathered as per the On board maintenance plan for hero class vessels specification. Note: "Area" includes feathering zone.
- The contractor must use the product recommended by the Paint Manufacturer Representative and adhere exactly to the application procedures stated by the Paint Manufacturer Representative. The use of thinners is not acceptable; all curing between coats and ventilation requirements must be adhered to. New hoses must be used for the application of paint in the Potable Fresh Water Tank. Hoses must not be flushed with thinner and then reused for the potable water tank. The work schedule for tank coating must provide drying times consistent with the paint manufacturer's recommendations for fresh water tanks.

- The tanks must be closed up after inspection by and the TA. New nitrile (or neoprene) gaskets must be used. The TA must witness the hardening up of all manholes, and closures.

7.16.2.4 PROOF OF PERFORMANCE

Inspection

Once all work has been completed and the tank is cleaned of all debris and work by-products, the contractor arrange for inspection and survey of the potable water tank by the TA.

Testing/Trials

- The Potable Water tanks and the ship's fresh water system must be super-chlorinated in accordance with the procedures laid out in the Coast Guard Fleet Safety Manual procedure Potable Water Quality 7.A.12. On completion of super-chlorination the tanks must be drained and flushed twice before being returned to service. The contractor must be responsible to dispose of all water used to treat the fresh water tanks, allowing for 5.25 m³ per fill for each of the 2 tanks, including de-chlorination of the super-chlorinated water.
- The contractor must arrange for testing of potable water tank and system in accordance with the Annual Testing of Potable Water as specified in the Canada Drinking Water Guidelines as prescribed by Health Canada. To verify this, the following procedure must be followed for each tank:
- The tanks must be filled with fresh water, super-chlorinated, de-chlorinated and then drained in accordance with the CCG Fleet Safety manual (FSM) Potable Water Quality Guidelines contained in section 7.A.12 prior to filling for testing.
- The potable water distribution system must be super chlorinated as per FSM. The main charcoal media filter must be bypassed and locked out while system super chlorination takes place.
- The tank must be filled with potable water to approximately fifty percent of the working volume of the tank.
- The tank must be allowed to remain stagnant for forty eight hours before samples are taken.
- One (1) blank water sample must be collected from the freshwater supply line used to fill the tank.
- Two water samples must be taken from the water inside the tank.
- Samples from the distribution system must be taken in accordance with FSM.
- The water samples listed above must be sent to an accredited laboratory for analysis. The water samples must be tested using the 28 parameters described in the fleet safety manual paragraph 3.6F de la section 7.A.12 .Results must be provided immediately to the TA. All parameters must be within the Health Canada Guidelines for Canadian Drinking water Quality.

Certification

The contractor must obtain water test reports from the laboratory.

7.16.2.3 DOCUMENTATION

The contractor must include all test reports in their final documentation. The contractor must provide evidence of acceptable tank water quality; prior to acceptance of the potable tank refit work by the CCG. The super chlorination and testing must be completed near the end of the work period

7.17. DECK EQUIPMENT / VESSEL SUPPORT SYSTEMS

N/A

7.18. COMMUNICATION AND NAVIGATION SYSTEMS

N/A

7.19. INTEGRATED CONTROL SYSTEMS

N/A