



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 2018	
Solicitation No. - N° de l'invitation F3775-17N341/A	Date 2018-01-25
Client Reference No. - N° de référence du client F3775-17N341	GETS Ref. No. - N° de réf. de SEAG PW-\$QCL-037-17330
File No. - N° de dossier QCL-7-40261 (037)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2018-02-12	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Woods, Michael	Buyer Id - Id de l'acheteur qcl037
Telephone No. - N° de téléphone (418) 649-2715 ()	FAX No. - N° de FAX (418) 648-2209
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Pêches et Océans NGCC Caporal Kaebler V.C et NGCC A. Leblanc 101 boul Champlain Att. C/E 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 Ship (C.C.G.S.) A. Leblanc during the winter 2018 layouts in the Port of 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 Canadian Free Trade Agreement (CFTA).

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 (2017-04-27) 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 (Not mandatory)

A bidders' conference (optional) will be held on board the ACV at Canadian Coast Guard base, 15 rue Prince, Sorel, Qc, G3P 4J4, on **February 1st, 2018 at 10:00 a.m.** **An attendance confirmation is required before 11:00 am, January 30th, 2018.**

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 (2) 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 (if it takes place), shall be included as an amendment to the bid solicitation document.

2.6 Viewing – Vessel (Not mandatory)

A visit of the vessel will be held immediately after the Bidder's conference.

2.7 Proposed Work Period

Work is to commence and be completed as follows:

Start: February 19th, 2018 or as per ship's availability. (At the earlier date.)
End: March 31st, 2018

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.

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

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.

4.2.1 Equivalent Product

SACC Manual Clause B3000T (2006-06-16) Equivalent Product

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 (EST) 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

(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

Upon contracting authority's request 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 Ship (C.C.G.S.) A. Leblanc during the winter 2018 layouts in the Port of 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.

4.2 Work period

Work is to commence and be completed as follows:

Start: February 19th, 2018 or as per ship's availability. (At the earlier date.)

End: March 31st, 2018

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:

Michael Woods
Supply Specialist (marine)
Public Works and Government Services Canada
Eastern Quebec Directorate
Marine Section

Telephone: 418-649-2715
Facsimile: 418-648-2209
E-mail address: michael.woods@pwgsc-tpsgc.gc.ca

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

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.

5.4 Contractor's representative

Name : _____
Title : _____
Telephone: _____
Facsimile: _____
E-mail address: _____

5.5 Technical Representative

The Technical Representative for the Contract is:

Name will be determined at Contract award

Telephone: _____

Facsimile: _____

E-mail address: _____

The Technical Representative 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.

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.

6.3 SACC Manual Clauses

SACC Manual Clause	C6000C (2017-08-17)	Limitation of Price
SACC Manual Clause	H4500C (2010-01-11)	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:

DFO.invoicing-facturation.MPO@canada.ca

Mailing Address :

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

Electronic copy to be sent for verification to:
michael.woods@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.

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.

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.

Solicitation No – N° de l'invitation
F3775-17N341/A
Client Ref No. – N° de réf. du client
F3775-17N341

Amd. No. – N° de la modif.
File No. – N° du dossier
QCL-7-40261

Buyer ID – id de l'acheteur
qcl 037

ANNEX A
STATEMENT OF REQUIREMENT

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:	\$ _____
	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.
 - (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.
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 (2016-04-04) 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 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.

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

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

Contractor's Name and Signature – Nom et signature de l'entrepreneur
Corrective Action - Date de modalité de reprise

Date of

Client Name and Signature - Nom et signature de client

Date

Solicitation No – N° de l'invitation
F3775-17N341/A
Client Ref No. – N° de réf. du client
F3775-17N341

Amd. No. – N° de la modif.
File No. – N° du dossier
QCL-7-40261

Buyer ID – id de l'acheteur
qcl 037

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

Signature – Signature

Date

Solicitation No – N° de l'invitation
F3775-17N341/A
Client Ref No. – N° de réf. du client
F3775-17N341

Amd. No. – N° de la modif.
File No. – N° du dossier
QCL-7-40261

Buyer ID – id de l'acheteur
qcl 037

ANNEX F

VESSEL CUSTODY

(NOT USED)

Solicitation No – N° de l'invitation
F3775-17N341/A
Client Ref No. – N° de réf. du client
F3775-17N341

Amd. No. – N° de la modif.
File No. – N° du dossier
QCL-7-40261

Buyer ID – id de l'acheteur
qcl 037

Annex G

SECURITY REQUIREMENTS CHECK LIST

(NOT USED)

Solicitation No – N° de l'invitation
F3775-17N341/A
Client Ref No. – N° de réf. du client
F3775-17N341

Amd. No. – N° de la modif.
File No. – N° du dossier
QCL-7-40261

Buyer ID – id de l'acheteur
qcl 037

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 1.2 (i) a), 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: 200 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

APPENDIX 1 OF ANNEX I

Scheduled Work:

PRICE PER ITEM SHEETS		
Item	Description – A) SCHEDULED WORK	Firm Price
Parts G1 and G2	GENERAL REMARKS & GENERAL INFORMATION ABOUT THE VESSEL	_____ \$
G3	REPORT OF WEIGHT ADDED AND REMOVED	_____ \$
Lb10	SAFETY AND SECURITY EQUIPMENT	_____ \$
Lb11	HULL AND RELATED STRUCTURE	_____ \$
Lb12	PROPULSION	_____ \$
Lb13	ELECTRICAL PRODUCTION	_____ \$
Lb14	ELECTRICAL DISTRIBUTION	_____ \$
Lb15	DECK EQUIPMENT	_____ \$
Lb18	COMMUNICATION AND NAVIGATION SYSTEMS	_____ \$
A) SCHEDULED WORK - TOTAL FIRM PRICE		_____ \$

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.

ANNEX J

Scheduled Known Work:

PRICING DATA SHEETS		
Item	Description – A) SCHEDULED WORK	Firm Price
Parts G1 and G2	GENERAL REMARKS & GENERAL INFORMATION ABOUT THE VESSEL (Bidders can enter \$0.00 or indicate 'included' if the fees for this item are distributed in each of the items bellow. In case the fees are not distributed an amount must be indicated in the price box.)	_____ \$
G3	REPORT OF WEIGHT ADDED AND REMOVED	_____ \$
Lb10	SAFETY AND SECURITY EQUIPMENT (Overheads fees related to this item must be distributed in each sub items.)	
	Lb10.1 – ANNUAL INSPECTION OF RESCUE ZODIAC	
	<p>Mobilisation / Demobilisation = \$ _____</p> <p>Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Sub-contractor (if applicable)</p> <p>Mobilisation / Demobilisation = \$ _____</p> <p>Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Total for this item : \$ _____</p>	
	Lb10.2 – FUEL HOSE CERTIFICATION	
	<p>Mobilisation / Demobilisation = \$ _____</p> <p>Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Sub-contractor (if applicable)</p> <p>Mobilisation / Demobilisation = \$ _____</p> <p>Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Total for this item : \$ _____</p>	

PRICING DATA SHEETS		
Item	Description – A) SCHEDULED WORK	Firm Price
	<p>Lb10.3 – PORTABLE FIRE EXTINGUISHERS INSPECTION</p> <p>Mobilisation / Demobilisation = \$ _____</p> <p>Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Sub-contractor (if applicable)</p> <p>Mobilisation / Demobilisation = \$ _____</p> <p>Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>For information only, do not include in the total for this item: Price for handling, emptying, refilling and installation of cylinders (Final prices to be prorated)</p> <p>Cylinder ABC 2,5 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder ABC 5 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder ABC 10 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder ABC 15 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder ABC 20 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder CO² 5 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder CO² 10 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder CO² 15 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder BC 20 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder AFF 9,5 lbs; _____ \$/cylinder = _____ \$</p> <p>For information only, do not include in the total for this item Price for replacement of cylinders (Final prices to be prorated)</p> <p>Cylinder ABC 2,5 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder ABC 5 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder ABC 10 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder ABC 15 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder ABC 20 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder CO² 5 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder CO² 10 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder CO² 15 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder BC 20 lbs; _____ \$/cylinder = _____ \$</p> <p>Cylinder AFF 9,5 lbs; _____ \$/cylinder = _____ \$</p> <p>Total for this item : \$ _____</p>	

PRICING DATA SHEETS			
Item	Description – A) SCHEDULED WORK	Firm Price	
	Lb10.4 – FIRE DETECTION SYSTEM Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Sub-contractor (if applicable) Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Total for this item : \$ _____		
	Lb10.5 – ANNUAL INSPECTION OF THE FIXED FIREFIGHTING SYSTEM Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Sub-contractor (if applicable) Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Total for this item : \$ _____		
	Total for Lb10 : _____ \$		
Lb11	HULL AND RELATED STRUCTURE (Overheads fees related to this item must be distributed in each sub items.) Lb11.1 – COMMAND CENTER FLOORING Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Sub-contractor (if applicable) Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Total for this item : \$ _____		

PRICING DATA SHEETS		
Item	Description – A) SCHEDULED WORK	Firm Price
	Lb11.2 – SHIP SERVICE GENERATOR'S SILENCERS REPLACEMENT Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Sub-contractor (if applicable) Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Total for this item : \$ _____	
	Lb11.3 – INSULATION BLANKET Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Sub-contractor (if applicable) Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Total for this item : \$ _____	
	Lb11.4 – GASKET CHANGE EXHAUST OUTLET Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Sub-contractor (if applicable) Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Total for this item : \$ _____	
	Total for Lb11 : _____ \$	
Lb12	PROPULSION Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Sub-contractor (if applicable) Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Total for this item : _____ \$	

PRICING DATA SHEETS		
Item	Description – A) SCHEDULED WORK	Firm Price
Lb13	ELECTRICAL PRODUCTION	
	<p>Mobilisation / Demobilisation = \$ _____</p> <p>Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Sub-contractor (if applicable)</p> <p>Mobilisation / Demobilisation = \$ _____</p> <p>Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p>	
	Total for this item :	_____ \$
Lb14	ELECTRICAL DISTRIBUTION (Overheads fees related to this item must be distributed in each sub items.)	
	Lb14.1 – CHECK TIGHTNESS OF THE POWER SUPPLY PANEL CONNECTORS	
	<p>Mobilisation / Demobilisation = \$ _____</p> <p>Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Sub-contractor (if applicable)</p> <p>Mobilisation / Demobilisation = \$ _____</p> <p>Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p>	
	Total for this item :	\$ _____
	Lb14.2 – MEGGER TESTS	
	<p>Mobilisation / Demobilisation = \$ _____</p> <p>Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p>Sub-contractor (if applicable)</p> <p>Mobilisation / Demobilisation = \$ _____</p> <p>Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p>	
Total for this item :	\$ _____	

PRICING DATA SHEETS		
Item	Description – A) SCHEDULED WORK	Firm Price
	Lb14.3 – REMOVAL MAIN SWITCHBOARD BUSS TIE UNDERVOLTAGE TRIP Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Sub-contractor (if applicable) Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Total for this item : \$ _____	
	Lb14.4 – WIRE REPLACEMENT FOR RECEPTACLE STBD MAINDECK OUTSIDE Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Sub-contractor (if applicable) Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Total for this item : \$ _____	
	Lb14.5 – BATTERY BOX UPGRADE Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Sub-contractor (if applicable) Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Total for this item : \$ _____	
	Lb14.6 – SHORE POWER GROUNDING MONITORING (MEG ALERT) Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Sub-contractor (if applicable) Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Total for this item : \$ _____	

PRICING DATA SHEETS		
Item	Description – A) SCHEDULED WORK	Firm Price
	Total for Lb14 :	_____ \$
Lb15	DECK EQUIPMENT <div style="text-align: right;"> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Sub-contractor (if applicable) Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Total for this item : </div>	_____ \$
Lb18	COMMUNICATION AND NAVIGATION SYSTEMS <div style="text-align: right;"> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Sub-contractor (if applicable) Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ Total for this item : </div>	_____ \$
TOTAL A) FIRM PRICE FOR SCHEDULED WORK =		_____ \$

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.

Annex A

CCGS A.Leblanc Winter work 2018

Spec number: 3775-17IN341

Date 2018-01-23

Revision No: 0

Prepared by : technical services

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101, Boul. Champlain

Québec (QC), G1K 7Y7

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G 1.0		
LIST OF ACRONYMS		

G 1.0 LIST OF ACRONYMS

CCGS	Canadian Coast Guard Ship
AMR	Auxiliary Machinery Room
CA	Contracting Authority (PWGSC)
CCG	Canadian Coast Guard
CLC	Canadian Labour Code
CPM	Contractor Provided Material
CSA	Canadian Standards Association - CSA
CSM	Contractor Supplied Material
CWB	Canadian Welding Bureau
DFO	Fisheries and Oceans Canada
FSR	Field Service Representative
FSSM	Fleet Safety and Security Manual
GSM	Government Supplied Material
HC	Health Canada
IEEE	Institute of Electrical and Electronic Engineers
IMO	International Maritime Organisation
LR	Lloyd's Register of Shipping
MMR	Main Machinery Room
MSDS	Material Safety Data Sheet
OAL	Overall length
OHS	Occupational Health and Safety
PWGSC	Public Works and Government Services Canada
SSC	The Rules and Regulations for the Design and Construction of Special Service Craft, produced by LR
SSMS	Safety and Security Management System
TA	Technical Authority - Owner's Representative (CCG)
TBS	Treasury Board Secretariat of Canada
TCMS	Transport Canada and Marine Safety and Security
TCMS	Transport Canada Marine Safety
TP	Transport Canada Publication
TSR	Technical Services Representative
WHMIS	Workplace Hazardous Materials Information System

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G 2.0		
General Notes		

G 2.0 GENERAL NOTES

G 2.1 Identification

G 2.1.1 These general notes specify CCG requirements applicable to all the following technical specifications.

G 2.2 References

G 2.2.1 Applicable regulations and documentation:

FSSM procedures	Title	Attached Yes/No
7.B.2.	Work at height and on walls	No
7.B.3	Entry into confined spaces	
7.B.4	Hot work	Yes
7.B.5	Lockout and identification	Yes
7.E.5	Handling, storage and disposal of hazardous materials	No
10.A.6	Paint and other coatings	No
7.E.8	Controlling the use of halocarbons on board vessels	No
7.A.12	Quality of drinking water	No
10.A.7	Contractor Safety and Security	No
Specific to the vessel	Specific to the vessel - Asbestos management plan	No
Publications		
TP3177E	Standards for the Control of Gas Hazards on Vessels Being Repaired or Altered	No
TP127E	Electrical standards for ships	No
IEEE 45	Recommended practise for electrical installations on board ships	No
70-000-000-EU-JA-001	Specification for installation of electronic equipment on board ships	Available at: CCG/ITS
CSA W47.1	Certification of Companies for Fusion Welding of Steel	Yes
CSA W47. 2	Certification of Companies for Fusion Welding of Aluminum	No
CSA W59	Welded Steel Construction (Metal Arc Welding)	No

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CSA W59.2	Welded Aluminum Construction	No
Legislation		
CSA	Canada Shipping Act	No
CLC	Canada Labour Code	No
Regulations		
SSTN	MOSH Marine Occupational Safety and Health Regulations	

G 2.3 Occupational Health and Safety

G 2.3.1 The contractor and all subcontractors shall follow occupational health and safety (OHS) instructions in accordance with relevant federal and provincial OHS regulations to ensure that the activities of the contractor are conducted safely and without compromising the safety of a staff member.

G 2.3.2 The contractor and the contractor's employees, including all subcontractors, shall attend an orientation session on vessel safety before the beginning 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, intervention in case of dangers and safety assessments before beginning work. The contractor will have access to an uncontrolled copy of the Fleet Safety and Security Manual.

G 2.3.3 The contractor shall 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 Canadian Labour Code during performance of work on the following:

Hot work;

Work at heights;

Entry into enclosed spaces;

Degassing before entering into confined spaces and for hot work;

Lockout and identification;

Safety assessments before beginning work.

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G 2.0		
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G 2.3.4 For the purpose of the Lockout and identification procedure, the contractor shall 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.

G 2.3.5 The contractor and its employees will not have access to the crew's washrooms or lounges. The contractor shall provide the necessary facilities for its employees and subcontractors as needed.

G 2.4 **Access to the workplace**

G 2.4.1 The contractor shall ensure that TA and CCG personnel have unlimited access to the workplace at all times during the contract.

G 2.5 **Workplace Hazardous Materials Information System (WHMIS)**

G 2.5.1 The contractor shall provide the TA with the material data safety sheets (MSDS) for any product subject to WHMIS control that it will supply.

G 2.5.2 The TA will provide the contractor with access to the Material Data Safety Sheets for all controlled products on board the vessel which could be used in any work item of the specification.

G 2.6 **Smoking in the workplace**

G 2.6.1 The contractor shall ensure compliance with the Non-smokers' Health Act. The contractor will ensure that each employer and any person acting on behalf of an employer ensures that they refrain from smoking in any workplace under the employer's control. The contractor shall ensure that there is absolutely no use of tobacco on board the vessel.

G 2.7 **Work area clean and free of danger**

G 2.7.1 During the work period, the contractor shall maintain in a clean and debris-free state the parts of the vessel used by its personnel to access places where it must perform work and dispose of waste daily.

G 2.7.2 Areas that are hazardous due to work done according to the specification shall 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 Canadian Labour Code.

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General Notes		

G 2.7.3 At the end of the contract, the contractor shall 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.

G 2.7.4 Once all predetermined work has been achieved and a final cleaning done, the contractor's quality guarantee representative (QG), the TA will make 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 captured in advance. The contractor shall fully correct

G 2.8 Fire protection

G 2.8.1 The contractor shall ensure that 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 shall then be recertified as being fully functional by a qualified technician. A signed and dated copy of the original certificate shall be delivered to the TA before the end of the contract.

G 2.8.2 The contractor shall notify the TA 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.

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G 2.0		
General Notes		

G 2.8.3 The contractor shall 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 process;

by other means acceptable and approved by the TA.

G 2.8.4 The contractor shall not the if it does not take the necessary precautions while performing the work, both on th vessel's fire extinguishing systems and those close to it, it could cause accidental discharge of the extinguishing agent. The contractor shall at its own expense refill and recertify the containers or system so emptied during its work.

G 2.9 Retouching/Painting affected

G 2.9.1 Unless otherwise indicated, all new steel and/or all affected steel shall receive two coats of marine primer, compatible with the vessel's paint coating scheme.

G 2.9.2 The contractor shall prepare all new or affected steel in accordance with the paint manufacturer's standards before painting.

G 2.10 Employees of CCG and others on the vessel

G 2.10.1CCG or DFO employees and other workers such as manufacturer's agents and/or TCMS or classification society experts may perform work other than those included in those included in this statement of work on board the vessel for the duration of this contract. The TA will do everything necessary to ensure that such work and/or inspections/examinations taking place do not interfere with the contractor's work. The contractor is not responsible to arrange the related inspections or to pay for them, unless otherwise indicated.

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G 2.0		
General Notes		

G 2.11 Regulatory inspections and/or classification examinations

G 2.11.1 The contractor shall make the calls and set the schedule for any regulatory inspections and/or classification visit by the responsible authority: that is, TCMS, HC, Environment Canada or other persons required by the specifications.

G 2.11.2 Any documentation generated by the inspections/visits referred to above and which demonstrates they have taken place (i.e., signed and dated originals of certificates) shall be provided to the TA.

G 2.11.3 The contractor shall not substitute regulatory inspections or classification visits by inspections done by the TA.

G 2.11.4 The contractor shall in a timely manner provide prior notice (at least 24 hours) for regulatory inspections/classification visits to the TA so he or she can attend the inspection/visit.

G 2.12 Results of tests and data collection

G 2.12.1 The contractor shall prepare a plan of tests and trials which shall include at least all the tests and trials set out in the specifications. This plan shall be offered to the TA for their approval one week before the beginning of the tests and trials originally planned.

G 2.12.2 All tests, measurements, calibrations and readings shall be recorded, signed by the person taking the measurements, dated and provided in electronic and paper report format – to the TA and TCMS.

G 2.12.3 Dimensions recorded in the register shall have an accuracy of three (3) decimal places (unless otherwise specified) in the measurement system in use on board the vessel.

G 2.12.4 The contractor shall provide the TA 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.

G 2.12.5 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.

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G 2.0		
General Notes		

G 2.12.6 All documentation from the contract period shall be incorporated in the collection of data to be remitted to the TA at the end of the contract period.

G 2.13 Tools and materials provided by the Contractor

G 2.13.1 The contractor shall ensure that all material are new and have never been used.

G 2.13.2 The contractor shall 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.

G 2.13.3 Where no particular article is specified or where a substitute must be used, the TA shall provide written approval for the substituted article. The contractor shall provide information on the materials used – certificate of classification and quality of various materials – to the TA before use.

G 2.13.4 The contractor shall 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.

G 2.13.5 The contractor shall 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 shall show that the disposal has been done in accordance with the federal, provincial and municipal directives in force.

G 2.14 Tools and materials provided by the government

G 2.14.1 All the tools will be provided by the contractor unless otherwise indicated in the technical specification.

G 2.14.2 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 shall be inventoried and the contractor shall sign an acknowledgement of receipt and return them to the TA.

G 2.14.3 Any Government Supplied Material (GSM) shall 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.

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G 2.0		
General Notes		

G 2.15 Familiarisation to Contractor

G 2.15.1 All personnel working at the Sorel Coast Guard Base must do a familiarisation and sign the 10.A.7 form. There will be 2 familiarisation meetings, one on the first day of work and a subsequent one can be arranged with the Contractor. The familiarisation will be given by a Coast Guard employee. Each session will be 2 hours.

G 2.16 Restricted access areas

G 2.16.1 Neither the Contractor nor any person assigned to work on the Contract or Agreement shall have unescorted access to the restricted areas of Fisheries and Oceans Canada facilities or Canadian Coast Guard vessels.

G 2.16.2 The contractor shall notify the TA at least 24 hours in advance before undertaking work in inhabited spaces or offices. These delays will give the CG the time needed to evacuate its personnel and ensure safety in these rooms.

G 2.17 Inspections by the contractor and protection of the workplace and equipment

G 2.17.1 The contractor shall coordinate an inspection of the condition and location of items to be removed with the TA before performing the specified work or accessing a location to work in it.

G 2.17.2 The contractor shall repair, at its own expense, any damage resulting from its actions during performance of its work and which may be attributed to its performance. All material used in a replacement or repair shall comply with the criteria for the material supplied by the contractor as indicated above in the Materials and Tools Supplied by the Contractor section.

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G 2.0		
General Notes		

G 2.17.3 The contractor shall protect all equipment and all neighbouring areas against damage. Work areas shall be protected against flooding and water leaks, debris from sandblasting, welding, etc. Temporary tarpaulins shall be installed above the work areas.

G 2.18 Records of work in progress

G 2.18.1 The TA may record the work in progress by various means including, but not limited to, photographs and video, whether digital or film.

G 2.19 List of confined spaces

G 2.19.1 The contractor may ask for a list of the vessel's confined spaces during the meeting preceding the refit.

G 2.20 Lead based paints and paint coatings

G 2.20.1 The contractor will not use lead-based paints.

G 2.20.2 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 shall 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.

G 2.20.3 The contractor shall demonstrate the product's approval by HC for hull paints controlled by HC and the **Pest Management Regulatory Agency**.

G 2.21 Materials containing asbestos

G 2.21.1 The contractor will not use any material that contains asbestos.

G 2.21.2 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 shall provide the TA with certificates showing that removal from the vessel of any material containing asbestos has been done in

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G 2.0		
General Notes		

accordance with the regulations in force from the federal, provincial and municipal governments.

G 2.22 Removed materials and equipment

G 2.22.1 All material removed under this specification remains the property of the CCG, unless instructions to the contrary are in the specifications section.

G 2.23 Welding certification

G 2.23.1 For all work requiring the use of fusion welding for steel structures, the contractor and/or the welders of subcontractors shall be certified by the Canadian Welding Bureau in accordance with CSA Standard W47.1-03, latest revision – Certification of companies for fusion welding of steel, Division Certification level 2 minimum. Copies of certifications (including those of the welders) will be submitted to the TA .

G 2.24 Electrical facilities

G 2.24.1 All electrical facilities and repairs shall 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.

G 2.25 Electrical power supply

G 2.25.1 The CCG will 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.

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G 3.0		
Report of weight added and removed		

G 3.0 REPORT OF WEIGHT ADDED AND REMOVED

G 3.1 Scope

G 3.1.1 Ships of the MSPV type are sensitive to weight additions. Materials added must be marked as well as the elements removed

G 3.2 Technical Description

G 3.2.1 The Contractor must weigh all the equipment that is added to the ship and this by specification item. The Contractor must also weigh all items that are removed from the vessel

G 3.3 Deliverable

G 3.3.1 A report including the weight per quote item that has been added and the weight per quote item that has been removed must be delivered to the Technical Authority prior to the completion of the work.

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Lb10.1		
SAFETY AND SECURITY EQUIPMENT Annual Inspection of Rescue Zodiac		

N.G.C.C. A.Leblanc		
Agent de projet :	Courriel :	Bur. : 418-648-5440
Isabelle Couillard-Desjardins	Isabelle.couillard-desjardins@dfo-mpo.gc.ca	

LB10 SAFETY AND SECURITY EQUIPMENT

LB10.1 ANNUAL INSPECTION OF RESCUE ZODIAC

Lb10.1.A Scope

Lb10.1.A.1 Have an authorized Zodiac representative complete the annual certification of the Zodiac lifeboat.

Lb10.1.B Technical Description

Lb10.1.B.1 The transport of the Zodiac will be provided by the Canadian Coast Guard to our inside facility in Sorel to allow the Contractor to perform work during normal working hours.

Lb10.1.B.2 The cost of repair services and parts will be adjusted up or down on form PWGSC-SPAC 1379.

Lb10.1.B.3

Lb10.1.C Boat description :

Ribo 420 : FRXBC210FB212
Serial no. 234006
Date of manufacture:02-12
Out board motor :M000TA5071
Engine Serial no.: 6BC-81800-00

Lb10.1.D Deliverable

Lb10.1.D.1 Provide the certificate and a full report on the inspection and repairs. These documents must be submitted to the Chief Engineer before the end of the work period.

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Lb10.2		
SAFETY AND SECURITY EQUIPMENT FUEL HOSE CERTIFICATION		

LB10.2 FUEL HOSE CERTIFICATION

Lb10.2.A.1 Supply the materials and labour to perform hydrostatic verification and test of both GOODYEAR FLEXSTEEL FUTURA brand fuel transfer hoses, one of 1 inch by (12) meters length and the second of 1 in. by 5 meters length.

Lb10.2.A.2 The Contractor is responsible to decontaminate the 2 hoses and dispose of the water used to hydrotest the hoses. The Contractor must give back the hoses dry and free of residue.

Lb10.2.A.3 Operating pressure of the hoses is 2 bars.

Lb10.2.A.4 Each hose must have a stainless steel plate indicating the test date, working pressure, test pressure, hose serial number, and Contractor's name.

Lb10.2.A.5 The Contractor must provide the Chief Engineer with a certificate for each hose and a copy to the technical authority. These documents must be submitted to the Chief Engineer before the end of the work period.

LB10.3 PORTABLE FIRE EXTINGUISHERS INSPECTION

Lb10.3.A Scope

Lb10.3.A.1 The Contractor shall remove the fire extinguishers from the vessel and transport them to an authorized service centre, where maintenance and testing will be performed. They shall then be brought back to the vessel and reinstalled.

Lb10.3.B References

Lb10.3.B.1 Reference drawings/data plate information

10.3.B.1.1 NFPA10 Standard for Portable Fire Extinguisher

Lb10.3.C List of types of vessel fire extinguishers to be inspected

	Navigation bridge
	Main deck
	Lower deck
	Boating equipment
	Supplementary

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Lb10.3		
SAFETY AND SECURITY EQUIPMENT PORTABLE FIRE EXTINGUISHERS INSPECTION		

No. station	Année	Emplacement	Marque & Modèle	Type	No. Série	Poids min (kg)	Dernière maintenance de 3/5/6 ans	Dernier test hydrostatique 5/12 ans
1	2012	Centre de commande	Amerex B456	Poudre ABC	BG-284191	7.54	01-2012	01-2012
3	2013	Centre de commande	Amerex 311	CO2	AC-415119	15.1	01-2013	01-2013
4	2013	Timonerie	Amerex B456	Poudre ABC	BU-121417	7.54	01-2013	03-2013
N/A	2013	Compartiment batterie tribord	Amerex B260	Mousse AK Sticker	AD-369268	9.22	03-2017	03-2017
N/A	2012	Compartiment batterie bâbord	Amerex 252	Mousse AB	AC-790008	12.5	03-2017	03-2017
6	2013	Coursive magasin aliments	Amerex 252	Mousse AB	AD-568099	12.5	03-2017	03-2017
8	2013	Cuisine	Amerex	Classe AK B260	AD-369273	9.22	01-2013	01-2013
9	2013	Coursive Cmdt, C/M	Amerex 252	Mousse AB	AD-568094	12.5	03-2017	03-2017
12	2013	Salle d'éqpt électronique	Amerex 331	CO2 BC	AC-415118	15.1	01-2013	01-2013
13	2013	Génératrice d'urgence	Amerex 331	CO2 BC	AC-415111	15.1	01-2013	01-2013
14	2011	Génératrice d'urgence	Amerex B456	Poudre ABC	AT-437639	7.54	03-2017	01-2011

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Lb10.3		
SAFETY AND SECURITY EQUIPMENT PORTABLE FIRE EXTINGUISHERS INSPECTION		

31	2013	Extérieur tribord	Amerex B456	Poudre ABC	BU-121547	7.54	01-2013	01-2013
15	2013	Appareil à gouverner	Amerex 252	Mousse AB	AD-568085	12.5	03-2017	03-2017
18	2013	Salle de contrôle	Amerex B456	Poudre ABC	BU-122134	7.54	01-2013	01-2013
20	2013	Propulseur d'étrave	Amerex 252	Mousse AB	AD-568090	12.5	03-2017	03-2017
21	2013	Coursive (toilettes)	Amerex 252	Mousse AB	AD-568087	12.5	03-2017	03-2017
22	2013	MMR bâbord	Amerex 331	CO2 BC	AC-415001	15.8	01-2013	01-2013
23	2013	MMR centre avant	Amerex 252	Mousse AB	AD-568092	12.5	03-2017	03-2017
24	2013	MMR tribord	Amerex A411	Poudre ABC	BT-764696	14.94	01-2013	01-2013
25	2013	MMR centre arrière	Amerex 331	CO2 BC	AC-415120	15.8	01-2013	01-2013
26	2013	MMR tribord	Amerex 252	Mousse AB	AD-568086	12.5	03-2017	03-2017
28	2013	AMR arrière	Amerex 252	Mousse AB	AD-568084	12.5	03-2017	03-2017
29	2013	AMR avant	Amerex 331	CO2 BC	AC-415109	15.8	01-2013	01-2013
30	2013	Coursive (S/C)	Amerex 252	Mousse AB	AD-568097	12.5	03-2017	03-2017
	2010	Embarcation	Pyrene	Poudre ABC	AE-107727	3.72	08-2016	01-2010
	2010	Embarcation	Pyrene	Poudre ABC	AE-107732	3.72	03-2015	01-2010
	2011	Zodiac Solas	Orfeo	Poudre ABC	75894.001 18334	1	03-2017	09-2011

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Lb10.3		
SAFETY AND SECURITY EQUIPMENT PORTABLE FIRE EXTINGUISHERS INSPECTION		

	2013	Compartment FI-FI (rouillé à la base et bossé sur le sommet)	Amerex B456	Poudre ABC	BU-122131	7.54	01-2013	01-2013
	2013	Compartment FI-FI	Amerex A411	Poudre ABC	BT-764697	14.94	01-2013	01-2013
	2013	Compartment FI-FI	Amerex 331	CO2 BC	AC-415121	15.8	01-2013	01-2013
	2010	Hangar Sorel	Amerex B456	Poudre ABC	AA-943726	7.54	01-2010	01-2010

Lb10.3.D Equipment supplied by owner

Lb10.3.D.1 Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

Lb10.3.E TECHNICAL DESCRIPTION

Lb10.3.E.1 The Contractor shall 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 shall leave the vessel.

Lb10.3.E.2 An annual inspection of portable fire extinguishers must be performed. Fire extinguisher inspection and maintenance shall be entrusted to a qualified representative.

Lb10.3.E.3 The Contractor must for a 3 year inspection of a foam fire extinguisher replace the foam

Lb10.3.E.4 The Contractor must remove the fire extinguisher in a sequence that doesn't remove more than a third of fire extinguisher at the time. The chief engineer will chose the sequence for the fire extinguisher removal.

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Lb10.3		
SAFETY AND SECURITY EQUIPMENT PORTABLE FIRE EXTINGUISHERS INSPECTION		

Lb10.3.F Annual inspection

Lb10.3.F.1 The fire extinguishers must undergo a visual inspection at least once a year. This inspection involves turning the fire extinguishers upside down and shaking them, top down, in order to loosen the powder that they contain.

Lb10.3.G Preventive maintenance/Maintenance

Lb10.3.G.1 Powder fire extinguisher: Every 6 years. Work done: Replacement of powder and verification of equipment's proper operation. A verification collar and a WHMIS label indicating the date of maintenance shall be affixed in accordance with the NFPA10 standard or newer.

Lb10.3.G.2 Water Fire Extinguisher, Type K, CO2: Every 5 years

Lb10.3.H Hydrostatic Test

Lb10.3.H.1 This test involves confirming that the container is in good condition by subjecting it to a pressure determined by the manufacturer.

Lb10.3.H.2 Powder fire extinguisher : Every 12 years.

Lb10.3.H.3 Water Fire Extinguisher, Type K, CO2: Every 5 years

Lb10.3.H.4 When a fire extinguisher has been used, even partially, it must be refilled immediately. Note that a refill is not considered to be preventive maintenance.

Lb10.3.I Proof of Performance

Lb10.3.I.1 Inspection

10.3.I.1.1 All work must be completed to the satisfaction of the Commanding Officer, the Chief Engineer or the person responsible for the vessel's maintenance.

Lb10.3.I.2 Testing

10.3.I.2.1 Fire extinguisher tests will be carried out in accordance with the rules of the Lloyd's Register classification society.

Lb10.3.I.3 Certification

10.3.I.3.1 The Contractor shall provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor must also

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb10.3		
SAFETY AND SECURITY EQUIPMENT PORTABLE FIRE EXTINGUISHERS INSPECTION		

send an electronic copy of all reports and certificates to the Vessel Maintenance Manager.

Lb10.3.I.4 Deliverables

10.3.I.4.1 Drawings/reports

10.3.I.4.2 The Contractor shall provide the Chief Engineer with two (2) paper copies of reports and checklists that explain in detail the work and necessary modifications. The Contractor shall also send an electronic copy of all reports to the person responsible for the vessel's maintenance.

A. Leblanc

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb10.4		
SAFETY AND SECURITY EQUIPMENT FIRE DETECTION SYSTEM		

LB10.4 FIRE DETECTION SYSTEM

Lb10.4.A SCOPE

Lb10.4.A.1 The purpose of this specification is to ensure that the Contractor retains the services of a licensed company to perform the annual inspection and certification of the fire detection system.

Lb10.4.B ReFeRENCES

Document	Title	Included Yes/No
Plan		
AF6095-55500-04_AF	FIRE CONTROL PLAN_Fr	yes
Publications		
Instruction Manual	Integrated fire detection system	
Instruction Manual	Fire Notifier NFS-320 fire detection system	
Standards		
MPO 5737	Fleet safety manual	
Regulations		
	Canada Shipping Act, 2001	

Lb10.4.C Equipment supplied by owner

Lb10.4.C.1 Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

Lb10.4.D TECHNICAL DESCRIPTION

LB10.4.D.1 General

10.4.D.1.1 The vessel is equipped with a Techsol integrated fire detection system with a Fire Notifier NFS-320 panel. The Fire Notifier NFS-320 panel is connected to the integrated fire alarm system, which is part of the vessel's surveillance and alarm system.

10.4.D.1.2 Before work begins, the Contractor shall arrange for a visit from a Lloyd Register classification society inspector.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb10.4		
SAFETY AND SECURITY EQUIPMENT FIRE DETECTION SYSTEM		

10.4.D.1.3 The Contractor shall retain the services of a licensed company to conduct the annual inspection and certification of the fire detection system.

10.4.D.1.4 The cost of repair services and parts will be adjusted up or down on form PWGSC-SPAC 1379.

Lb10.4.D.2 Location

10.4.D.2.1 The fire detection system control panel is found on the port side of the wheelhouse.

Lb10.4.E PROOF OF PERFORMANCE

Lb10.4.E.1 Inspection

10.4.E.1.1 All work shall be completed to the satisfaction of the Chief Engineer.

Lb10.4.E.2 Certification

10.4.E.2.1 The contractor shall submit to the Chief Engineer two (2) paper copies of the maintenance certificates and annual certification with their original copy. The Contractor shall also send an electronic copy of all the reports and certificates to the Project officer.

Lb10.4.E.3 DELIVERABLES

10.4.E.3.1 Drawings/reports

Lb10.4.E.4 The Contractor shall 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 shall also send an electronic copy of all the reports and certificates to the Vessel Maintenance Manager. These documents must be submitted before the end of the work.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb10.5		
SAFETY AND SECURITY EQUIPMENT ANNUAL INSPECTION OF THE FIXED FIREFIGHTING SYSTEM		

LB10.5 ANNUAL INSPECTION OF THE FIXED FIREFIGHTING SYSTEM

Lb10.5.A SCOPE

Lb10.5.A.1 The purpose of this specification is to perform maintenance on and certify the fixed fire suppression system.

Lb10.5.A.2 The Contractor shall communicate with the Chief Engineer before undertaking the work for this item. This work shall be performed in conjunction with the portable fire extinguisher maintenance without reducing the fire suppression capacity aboard the vessel.

Lb10.5.A.3 The fixed fire suppression system is an FM200.

Lb10.5.B References

Document	Title	Included Yes/No
Plan		
AF6095-55500-04_AF	FIRE CONTROL PLAN_Fr	yes
Publications		
90-FM200M-2	Kidde Fenwal FM200 Marine ECS series Engineered Fire Suppression System, Design, installation, Operation and Maintenance Manual	no
Standards		
MPO 5737	Fleet Safety Manual	
Regulations		
	Canada Shipping Act, 2001	

Lb10.5.C Accreditation

Lb10.5.C.1 The contractor must be accredited for the certification of this system by Lloyd's Registers and must certify to the most recent standard of Transport Canada.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb10.5		
SAFETY AND SECURITY EQUIPMENT ANNUAL INSPECTION OF THE FIXED FIREFIGHTING SYSTEM		

Lb10.5.D Equipment supplied by owner

LB10.5.D.1 Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications

Lb10.5.E TECHNICAL DESCRIPTION

Lb10.5.E.1 General

10.5.E.1.1 The contractor shall retain the services of an authorized representative who will conduct the tests and inspections of the vessel's FM200 system and galley fire system as part of the annual inspection and certification of this system. The Chief Engineer must attend all tests.

10.5.E.1.2 In addition to the following tests, the contractor shall conduct all tests required by the Lloyd's Register inspector on site. The contractor must provide in his estimate the cost for testing alarms (lights and sirens) of all devices, testing the nitrogen release cylinders, testing ventilation closure devices and the test for release buckles and cables.

10.5.E.1.3 The Contractor shall use air pressure to clean the pipes and pneumatic actuators and ensure that they work properly. The pipes and nozzles must be free of obstruction.

10.5.E.1.4 The contractor shall ensure that the alarm displays and sirens are working correctly. The contractor shall weigh each cylinder and record the results. At the end of the refit, the Contractor shall provide the Chief Engineer with copies of all certificates.

10.5.E.1.5 At the end of the tests and inspections, the contractor shall reinstall the systems and return them to service.

10.5.E.1.6 For the FM200 system a halocarbon leak detection test shall be performed by accredited personnel for halocarbons and shall be carried out with adequate detection equipment

Lb10.5.F Security Bulletin

Lb10.5.F.1 Lb10.5.F.1 The contractor must make the modification to the system according to the bulletin of Kidde / 16-35K-3 Marine Owner.

Lb10.5.F.2 Lb10.5.F.2 Control heads have been identified as part of the recall

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb10.5		
SAFETY AND SECURITY EQUIPMENT ANNUAL INSPECTION OF THE FIXED FIREFIGHTING SYSTEM		

Lb10.5.G **PROOF OF PERFORMANCE**

Lb10.5.G.1 Inspection

10.5.G.1.1 All work shall be completed to the satisfaction of the Chief Engineer, the Vessel Maintenance Manager and the Lloyd's Register inspector.

Lb10.5.G.2 Tests

10.5.G.2.1 The Chief Engineer must be present for the system inspection and test.

Lb10.5.H **Certification**

Lb10.5.H.1 The Contractor shall 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.

Lb10.5.H.2 For the FM200 a halocarbon leak test must be performed by accredited halocarbon personnel with adequate material. The Contractor must provide a certificate for the leak test. The certificate must show the technician certificate number.

Lb10.5.H.3 DELIVERABLES

10.5.H.3.1 Drawings/reports

10.5.H.3.2 The Contractor shall 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.

10.5.H.3.3 The Contractor must provide before the work begins a copy of the Lloyd's accreditation to work on the fire system.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb11.1		
Hull and Structure Command center flooring		

LB11 **Hull and Structure**

LB11.1 **COMMAND CENTER FLOORING**

Lb11.1.A **Scope**

Lb11.1.A.1 The floor in the command room must be replaced. The furniture must be removed and re-installed once the work is completed.

Lb11.1.B **Equipment supplied by owner**

Lb11.1.B.1 Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

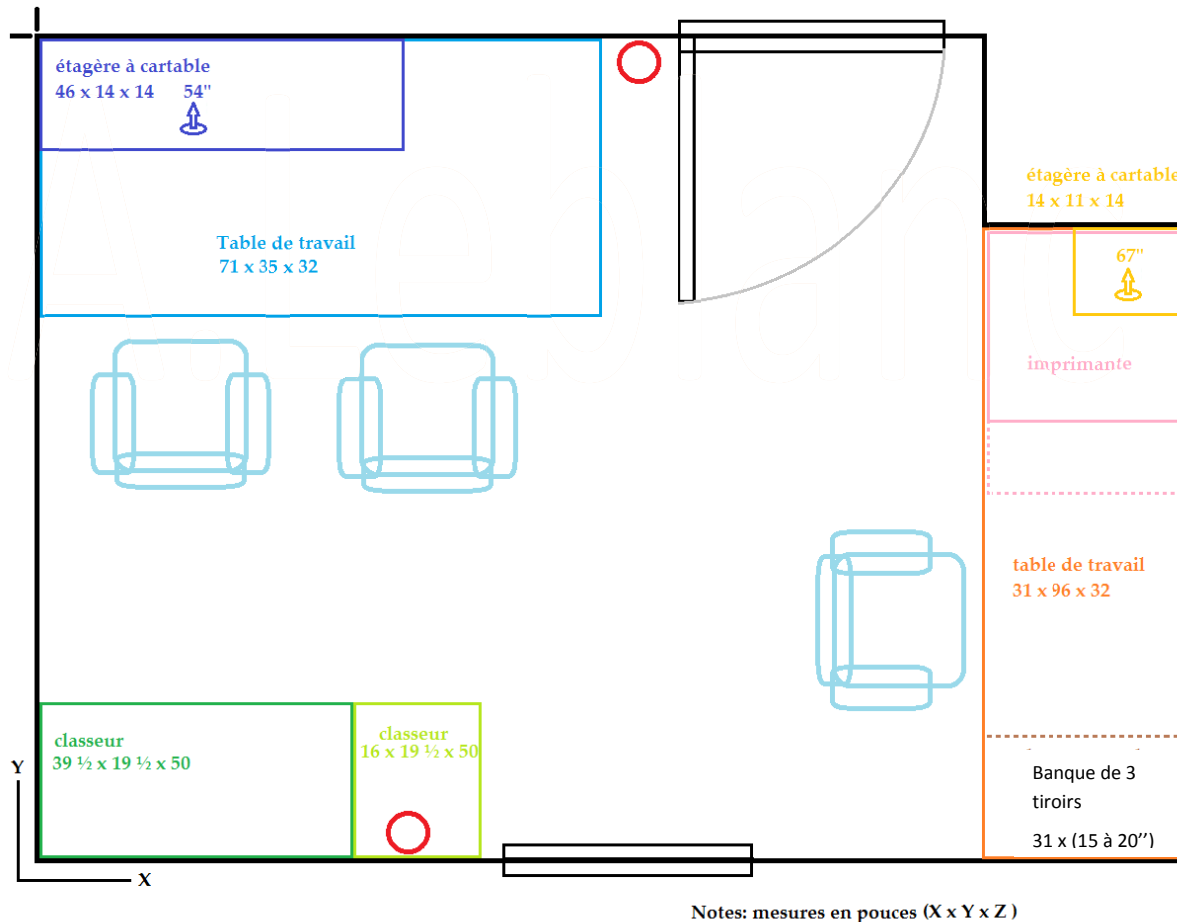


Figure 1: Configuration of the command center

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb11.1		
Hull and Structure Command center flooring		

Lb11.1.C **Technical Description**

Lb11.1.C.1 The Contractor must remove and replace once finished any furniture that is installed in the Command Room.

Lb11.1.C.2 The approximate size of the room is Width: 145 ¼ inches and Depth: 113¼ inches

Lb11.1.C.3 The contractor must remove the floor in the command center. That is, the vinyl tile cover and the marine cement that is present. The contractor must dispose of the materials.

Lb11.1.C.4 The contractor must protect the equipment for the duration of the work. This equipment includes electronic equipment.

Lb11.1.C.5 The contractor must make the application of the products in temperature and humidity ranges allowed by the manufacturer of the chosen products.

Lb11.1.C.6 The bridge is aluminum. The bridge is not a structure with fire protection.

Lb11.1.C.7 The contractor shall remove the vinyl floor and marine cement floor to reach the deck.

Lb11.1.C.8 The contractor must install a marine cement, and a vinyl cover that is suitable for use on a ship.

Lb11.1.C.9 The contractor must install kick plate of a coordinated color on the walls and seal all edges to ensure water can't get in behind.

Lb11.1.C.10 The contractor shall use a floor covering system that will comply IMO (International Maritime Organization) part 2 and part 5. Regarding flames and toxicity and flammability of the surface.

Lb11.1.C.11 The contractor must supply and install a color coating of a blue tint. A color sample must be submitted to the Chief Engineer and approved prior to installation.

Lb11.1.D **Proof of performance**

Lb11.1.D.1 The Contractor must demonstrate to the Technical Authority that all products used conform to IMO standards for smoke.

Lb11.1.D.2 The Contractor shall demonstrate to the Technical Authority or designate that all floor joints and joints with kicks are properly sealed

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb11.2		
Hull and Structure SHIP SERVICE GENERATOR'S SILENCERS REPLACEMENT.		

LB11.2 SHIP SERVICE GENERATOR'S SILENCERS REPLACEMENT.

Lb11.2.A IDENTIFICATION

Lb11.2.A.1 The Contractor must install 2 (two) Coast Guard supplied silencers per ship in the exhaust manifold of the generators, in order to reduce noise pollution.

Lb11.2.B References

Lb11.2.B.1 Existing silencer/spark arrestor specs

Type : REAB25-IS-18"

Design : Reactive-Absorptive including spark arrestor

Attenuation: 25dB(A)

Inlet: NB 450

Outlet: NB 450

Dimensions: as per attached documents

Material: Stainless Steel 304

Flanges: St-37 (S235JRG)

Lb11.2.C New Silencer/spark arrestor specs

Model: MIRATECH SUCEE0-05PF-1-00000000

Dimensions: as per attached documents

Lb11.2.C.1 Each ship service generator has silencer/spark arrestor mounted onto exhaust manifold located in the AMR.

Lb11.2.C.2 Silencers are insulated by means of fire and temperature protective blankets. There are total of 2 blankets per ship.

Lb11.2.D DRAWINGS AND DOCUMENTS

Miratech SUCEE0-05PF-1-00000000

Lb11.2.E TECHNICAL

Lb11.2.E.1 The Contractor shall ensure that all applicable safety precautions including equipment lock outs and tag outs, as per the Fleet Safety Management System, are implemented prior to the start of work.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb11.2		
Hull and Structure SHIP SERVICE GENERATOR'S SILENCERS REPLACEMENT.		

Lb11.2.E.2 The Contractor and Chief Engineer, using a proper lock out/tag out procedure, must isolate the ship service generator preventing it from the start. Where deemed necessary the Contractor and Chief Engineer must place their own locks so breakers and valves remain isolated by means of two different locks at all times.

Lb11.2.E.3 One generator to be worked on at a time. Ships should be able to go on ship's power at any time, if required.

Lb11.2.E.4 The Contractor to remove protective blankets from the silencer.

Lb11.2.E.5 The Contractor to provide temporary support for the existing silencer and exhaust piping prior to silencer removal in order to avoid stress on the materials while permanent support brackets have been removed.

Lb11.2.E.6 Once temporary support is in place, silencer support brackets could be removed, followed by silencer removal by disconnecting the bolts on the flanges.

Lb11.2.E.7 As per data provided, new silencer is 8" longer than the old one. The Contractor to carry out necessary set of measurements on both silencers prior to exhaust manifold shortening in order to confirm the data provided.

Lb11.2.E.8 The Contractor, upon taking of necessary measurements, is to cut the exhaust manifold from the AFT end only, in order to accommodate new silencer. The Contractor to reuse aft flange removed from the exhaust manifold. Flange fitting surface to be machined in order to provide proper fit onto the exhaust manifold. The Contractor to provide the new flanges in case old ones could not be reused for any reasons.

Lb11.2.E.9 The Contractor, upon cutting the exhaust manifold to pre-determined distance, should temporary fit new silencer in place in order to confirm the proper fit.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb11.2		
Hull and Structure SHIP SERVICE GENERATOR'S SILENCERS REPLACEMENT.		

Lb11.2.E.10 Once the silencer is in place, AFT flange should be properly positioned and tagged in place by welding. Silencer should be taking down and flange should be completely welded in place.

Lb11.2.E.11 The Contractor to fit new silencer in place using new gaskets and hardware for both flanges.

Lb11.2.E.12 The Contractor to modify old support brackets (if required) in order to provide proper support for newly installed silencer.

Lb11.2.E.13 The Contractor to provide new protective blanket for the each silencer. Blankets to be of the same standards and quality or higher than previously fitted and incorporate fire and heat retardant qualities required for this type of installation.

Lb11.2.E.14 The Contractor to follow the same installation pattern for the remaining silencers.

Lb11.2.F **PROOF OF PERFORMANCE**

Lb11.2.G **INSPECTIONS.**

Lb11.2.G.1 The Contractor must afford the TA the opportunity to inspect the completed work prior to performing any system tests

Lb11.2.H **Testing/Trials**

Lb11.2.H.1 The Contractor must install new silencers, re-assemble the exhaust system to its original condition and confirm system integrity, cleanliness and no leaks from any of the re-worked section of piping. The Contractor must perform a system test to ensure that there are no exhaust leaks on the system.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb11.3		
Hull and Structure Insulation blanket		

Lb11.2.I Deliverables

Lb11.2.J Documentation (Reports/Drawings/Manuals)

Lb11.2.J.1 The Contractor must provide updated “As-Fitted” drawings of the exhaust system showing the exact installation of the new silencers installed and any additional fittings/lines installed in the system as a result of this installation. The Contractor shall provide an electronic copy of the updated drawing in AutoCad native DWG format version 2010 or later that must not be password protected. The drawing must be supplied to the TA prior to the close of the contract on a USB stick.

LB11.3 INSULATION BLANKET

Lb11.3.A Scope

Lb11.3.A.1 Provide insulation blanket for the area where the new silencer is installed.

Lb11.3.B Technical

Lb11.3.B.1 Inner lining: high temperature fiberglass fabric

Lb11.3.B.2 Second interior lining: stainless steel mesh

Lb11.3.B.3 Insulation: Vitreous silicate fibre and E-Glass weight consideration must be taken, a product to be at most 15 lbs/ cu

Lb11.3.B.4 Exterior coating: 32oz fiberglass fabric. impregnated with silicone

Lb11.3.B.5 Accessories: Hooks, Stainless Steel Pin and Fiberglass Cord

Lb11.3.B.6 Install covers with stainless steel wire

Lb11.3.B.7 velcro is not acceptable

LB11.4 GASKET CHANGE EXHAUST OUTLET

Lb11.4.A Scope

Lb11.4.A.1 Provide manpower to replace the gaskets in the exhaust line between the auxiliary engine room bulkhead in the steering gear compartment.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb11.4		
Hull and Structure Gasket change exhaust outlet		

Lb11.4.B **Technical description**

Lb11.4.B.1 The approximate dimensions are outer diameter of 595 mm. Seals will be provided by Canada. The exhaust outlets are covered with insulating covers that must be reused.

Lb11.4.C **Proof of performance**

Lb11.4.C.1 Before the insulation blankets are reinstalled, the Contractor must demonstrate to the Chief Engineer that there is no escape of exhaust gas.

A. Leblanc

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb12.1		
Propulsion Relocation of the main engine control modules		

LB12 Propulsion

LB12.1 RELOCATION OF THE MAIN ENGINE CONTROL MODULES

Lb12.1.A Scope

Lb12.1.A.1 This specification covers work to be completed onboard the CCG Hero Class vessels. The PIM4 connection boxes for both port and starboard main engines are installed in the Main Machinery Room (MMR). The PIM4 boxes are open to atmosphere in the MMR as well as being rigidly attached to the ship structure. These locations and connections leads to high temperature, humidity, and vibration affecting the electronic components in the boxes. MTU has identified the location and installation method of these boxes as contributing factor in the alarm RL211+A110-A110 that routinely is triggered by the Local Operating Panels (LOP). To alleviate this, the PIM4 boxes, LOP X12 junction boxes and Emergency Stop junction box are to be moved to the Machinery Control Room (MCR).

Lb12.1.A.2 Reference

Document	Title	Included Yes/No
Plan		
J17052-E01	PIM4 box relocations ME remote system one line diagram mods	yes
Publications		
Standards		
TP 127 E	Transport Canada Ships Electrical Standards	
Regulations		
	Lloyd's special Service Craft 2016	
	Loi sur la marine marchande du Canada, 2001	

Lb12.1.B Technical

Lb12.1.C Equipment/Material Required

Lb12.1.C.1 Any new steel plates and shapes required during the removal and/or relocation of the boxes shall be minimum Lloyds Grade 'A' or equivalent.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb12.1		
Propulsion Relocation of the main engine control modules		

Lb12.1.C.2 The Contractor shall supply all material required, including any material required to complete the work which is not explicitly identified in this specification

Lb12.1.C.3 All new steel work shall be sandblasted and shop primed with a primer compatible with the vessel's existing paint system. On completion of all welding, all damaged paintwork shall be wire brushed to remove loose material.

Lb12.1.C.4 All work shall be consistent with Transport Canada Marine Safety standards, Lloyds Register standards, and all other applicable standards as listed in the References section of this Technical Statement of Requirement. Work shall be consistent with good shipbuilding practice where standards are not applicable. The work shall be conducted to the satisfaction of the designated approval authority.

Lb12.1.D Outfitting Strip-out – Main Machinery Space

Lb12.1.D.1 The port and starboard PIM4 boxes and LOP X12 junction boxes as well as the Emergency Stop junction box located in the MMR inboard of the main engines (see Figures 1, 2 and 3) shall have all cables disconnected and either pulled back from their current location and replaced with new cables. The boxes shall then be dismantled for relocation in the MCR.

Lb12.1.E Technical Description

Lb12.1.E.1 The contractor shall disconnect, pull back, and remove all associated cables. Approximate distance from original location is 25'. See drawing 'J17052-E01 M.E. Remote System One Line Diagram Modifications' for guidance.

Lb12.1.E.2 Where existing cable supports cannot be used the contractor shall supply and install new cable supports. The contractor must demonstrate to the chief engineer the requirement for additional cable trays and the installation will be negotiated through PWGSC PSPC 1379 process.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb12.1		
Propulsion Relocation of the main engine control modules		

Lb12.1.E.3 The contractor must remove the cables and reroute to the control room.

Lb12.1.E.4 Cables that are too short must be shown to the Chief Engineer and the process of replacing these cables by cables of the same construction and the same gauge, will be negotiated through PWGSC PSPC 1379 process.

LB12.1.E.5 All cables shall be properly installed and secured to either the existing cable supports or the newly installed cable supports. All identification tags are to be re-installed and where not possible new permanently marked non-ferrous metal tags are to be provided and installed.

Lb12.1.F **INSPECTION**

Lb12.1.G **General**

Lb12.1.G.1 The work shall be carried out to the satisfaction of the Project Officer and/or the Technical Authority Representative.

Lb12.1.H **Inspections**

Lb12.1.H.1 Inspections shall be carried out by the Project Officer and/or the Technical Authority Representative. The representative shall conduct a final inspection to determine acceptance of the work. The work shall also be inspected by the Contractor to ensure the methods of installation and workmanship conform to the drawings and specification.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb12.1		
Propulsion Relocation of the main engine control modules		



Figure 2: Port engine boxes existing locations (looking fwd)



Figure 3: Stbd Engine PIM 4 Box existing location looking fwd

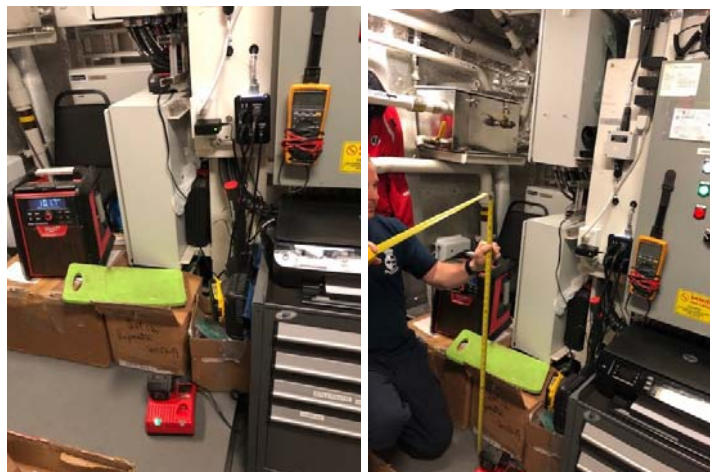
Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb12.1		
Propulsion Relocation of the main engine control modules		



Figure 4: Stbd Engine LOP X12 JB existing Location (looking fwd)

Lb12.1.1 Outfitting Strip-out – Machinery Control Room

Lb12.1.1.1 The upper section of the tool cabinet located against the forward bulkhead at Frame 19 in the MCR (see Figure 4) shall be removed for reinstallation next to the other tool box in the control room.



Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb12.1		
Propulsion Relocation of the main engine control modules		



Figure 5: Tool cabinet location (looking fwd)

Lb12.1.J Structural Strip-out

Lb12.1.J.1 Mounting plates and/or structure for the removed PIM4 boxes and tool cabinet need not be removed unless directed to do so by the On-site Project Officer.

Lb12.1.K Transit Installation

Lb12.1.K.1A A 'S6x1 Primed' multi-cable transit (MCT) and packing system including wedge kit shall be installed in the bulkhead separating the MMS and the MCR at Frame 17 at approximately 1300 mm off centerline to port. See drawing 'J17052-A01 Rev.0 PIM4 Boxes Relocation' for guidance.

12.1.K.1.1 The Contractor must provide the transit of size S6 X1 cable and equipment required for installation. Transit must be of a type approved by the Lloyd's Register.

Lb12.1.K.2 All insulation, piping and equipment removed to facilitate the installation of the transits shall be replaced to their original condition.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb12.1		
Propulsion Relocation of the main engine control modules		

Lb12.1.L **PIM4 Boxes Reinstallation**

Lb12.1.L.1 On the forward bulkhead at Frame 19 in the MCR in the area where the upper section of the tool cabinet was removed mounting plates shall be installed to accommodate the PIM4 and junction boxes. These plates shall be welded to the existing bulkhead stiffeners or to newly installed stiffeners. See drawing 'J17052-A01 PIM4 Boxes Relocation' in Appendix A for guidance.

Lb12.1.L.2 The PIM4 boxes shall be mounted using vibration isolators.

Lb12.1.L.3 Prior to reinstallation, any slag, dirt, grease, paint etc. shall be removed before welding to existing steel.

Lb12.1.L.4 After completion of welding, any spatter shall be removed and the welds ground smooth before painting is undertaken. All areas where existing paintwork is damaged by cutting and welding shall be repaired and repainted utilizing a system compatible with the ship's existing paint system.

Lb12.1.L.5 Contractor shall have available any required weld procedure data sheets (WPDS) for completing the structural repair.

A. Leblanc

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb13.1		
Electrical Production Annual Maintenance of Generator Alternators		

LB13 Electrical Production

LB13.1 ANNUAL MAINTENANCE OF GENERATOR ALTERNATORS

Lb13.1.A **Scope**

LB13.1.A.1 Perform the annual maintenance of port, starboard and emergency generator alternators.

Lb13.1.B **References**

Document	Title	Included Yes/No
Plan		
Publications		
	Magnaplug Generator, 280-430 Frame, Installation, Operation and Maintenance Manual	
	Voltage Regulator AVC63-12 and AVC125-10 Manual	
Standards		
TP 127 E	Normes d'électricité régissant les navires	
Regulations		
	Lloyd's special Service Craft 2016	
	Loi sur la marine marchande du Canada, 2001	

Lb13.1.C **Equipment supplied by owner**

LB13.1.C.1 Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
0		
Electrical Production		

Lb13.1.D **TECHNICAL DESCRIPTION**

Lb13.1.D.1 General

13.1.D.1.1 Check and record insulation resistance with a 500 megohm meter. The minimum acceptable reading is 2 megohms. All electronics (regulators, diodes, capacitors, protection relays) must be disconnected from the winding circuit before checking the insulation. If the reading is less than the minimum, the generator must be cleaned and dried at an authorized service shop.

13.1.D.1.2 Check the no load DC excitation voltage and check the RPM. Record the no load excitation (DC voltage at the excitation stator), the generator terminal voltage and the speed of the drive mechanism as benchmarks for future troubleshooting.

Lb13.1.E **PROOF OF PERFORMANCE**

Lb13.1.E.1 Inspection

13.1.E.1.1 Work shall be completed to the satisfaction of the Chief Engineer.

13.1.E.1.2 Provide a report indicating the values measured and irregularities observed. The report must be given before the end of the work period.

Lb13.1.E.2 DELIVERABLES

13.1.E.2.1 Drawings/reports

13.1.E.2.2 The Contractor shall 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 project officer. The report must be given before the end of the work period.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb14.1		
Electrical Distribution Check Tightness of the Power Supply Panel Connectors		

LB14 Electrical Distribution

LB14.1 CHECK TIGHTNESS OF THE POWER SUPPLY PANEL CONNECTORS

Lb14.1.A **Scope**

Lb14.1.A.1 Conduct a check of tightness of all terminals and connectors in the main panel for main distribution and emergency distribution.

Lb14.1.B **Reference**

Document	Title	Inclus
Plan		
Publications		
Standards		
TP 127 F	Normes d'électricité régissant les navires	non
Regulations	Lloyd's special Service Craft 2016	
	Loi sur la marine marchande du Canada, 2001	

Lb14.1.C **Equipment supplied by owner**

Lb14.1.C.1 Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

Lb14.1.D **TECHNICAL DESCRIPTION**

Lb14.1.D.1 General

14.1.D.1.1 Completely isolate and secure each panel. Isolation of each panel shall be done by withdrawal of a physical element from the electrical network.

14.1.D.1.2 A minimum of current shall be maintained on board for safety purposes

14.1.D.1.3 Coordination of the work shall be done in collaboration with the Chief Engineer.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb14.1		
Electrical Distribution Check Tightness of the Power Supply Panel Connectors		

14.1.D.1.4 The contractor shall check all terminals, relays and attachments for electrical cables within the following cabinets (see attached photo):

- Main panel (including MCC and 600 volt distribution)
- Main emergency panels
- 600 volt power supply
- 240 volt power supply
- 120 volt power supply

14.1.D.1.5 The Contractor must check all power and control cables.

14.1.D.1.6 Bolting of main power supply bars shall be checked and tightened to the torque required by the standards in force. A permanent pen mark shall be made to indicate the bolting done

Lb14.1.E PROOF OF PERFORMANCE

Lb14.1.E.1 Inspection

14.1.E.1.1 Work shall be completed to the satisfaction of the Chief Engineer.

14.1.E.1.2 Provide before the end of the work period a report indicating irregularities observed.

Lb14.1.E.2 DELIVERABLES

14.1.E.2.1 Drawings/reports

14.1.E.2.2 The Contractor shall submit to the Chief Engineer, before the end of the work period, a hard copy of the typed report, detailing the inspections, modifications and repairs made, and prior to acceptance of this item. The Contractor must also send an electronic copy of all reports and certificates to the Vessel Maintenance Manager.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb14.2		
Electrical Distribution Checking the insulation of various electrical components (MEGGER TEST)		

LB14.2 CHECKING THE INSULATION OF VARIOUS ELECTRICAL COMPONENTS (MEGGER TEST)

Lb14.2.A SCOPE

Lb14.2.A.1 Conduct insulation tests of various electrical components from the electrical generation (generator set) to the different components

Lb14.2.B References

Document	Title	Included Yes/No
Plan		
Publications		
Standards		
TP 127 F	Normes d'électricité régissant les navires : https://www.tc.gc.ca/fra/securitemaritime/tp-tp127-menu-263.htm	
Regulations	Lloyd's special Service Craft 2016 Loi sur la marine marchande du Canada, 2001	

Lb14.2.C Equipment supplied by owner

Lb14.2.C.1 Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications. The Contractor must have an electrician with at a minimum a license C to complete the work.

Lb14.2.D TECHNICAL DESCRIPTION

Lb14.2.D.1 General

14.2.D.1.1 Conduct a ground leakage test on the different component

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb14.2		
Electrical Distribution Checking the insulation of various electrical components (MEGGER TEST)		

Port generator set
 Starboard generator set
 Emergency generator set
 Equipment connected to the 600v main distribution panels
 Equipment connected to the 240v main distribution panels
 Equipment connected to the 120v main distribution panels
 Equipment connected to the 600v emergency distribution panels
 Equipment connected to the 240v emergency distribution panels
 Equipment connected to the 120v emergency distribution panels
 Equipment connected to the 24v emergency distribution panels

Lb14.2.E **PROOF OF PERFORMANCE**

Lb14.2.E.1 Inspection

- 14.2.E.1.1 Work shall be completed to the satisfaction of the Chief Engineer.
- 14.2.E.1.2 Provide a report indicating irregularities observed and the values recorded.

Lb14.2.E.2 DELIVERABLES

- 14.2.E.2.1 Drawings/reports
- 14.2.E.2.2 The Contractor shall 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 project officer.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb14.3		
Electrical Distribution Removal Main switchboard buss tie Undervoltage trip		

LB14.3 REMOVAL MAIN SWITCHBOARD BUSS TIE

UNDERVOLTAGE TRIP

Lb14.3.A Scope

Lb14.3.A.1 The contractor shall disconnect and remove the UV tripping coil from the Main Switchboard Buss Tie Breaker identified as CB-TIE.

Lb14.3.B Objective

Lb14.3.B.1 This buss tie breaker has no capability for generators to parallel across it. Should the 24VDC backup supply fail the system automatically opens this buss tie breaker and the operator must run two ships service generators to power up both halves of the buss. Under this control philosophy, to get back to single generator operation the operator must black out one half of the switchboard to close the Tie Breaker. Under certain conditions (Close Quarters Operations) this blackout operation may not permit the operator to get back to single generator operation without risk of an operational hazard. With the CB-Tie UV trip disabled the main buss functions as a normal switchboard and the Paralleling across the tie breaker is mitigated.

Lb14.3.B.2

Lb14.3.C Reference Documents

1. TP127E, Ships Electrical Standards: <http://www.tc.gc.ca/eng/marinesafety/tp-tp127-menu-263.htm>
2. Lloyd's Rules and Regulations for the Classification of Special Service Craft, 2011
3. Techsol Drawing SB05AA
4. Fleet Safety and Security Manual (DFO/5737)
5. Canada Shipping Act 2001 – Marine Machinery Regulations.

Lb14.3.D Scope of Work

Lb14.3.D.1 Contractor shall make arrangements with the Chief Engineer to remove the CB-TIE breaker (ABB #T3N225TW) from the switchboard. While the breaker is out the contractor shall do a general inspection of the breaker to ensure that it is in good working order. The contractor will then remove the UV trip coil and any related wiring that is not required. The breaker will be reassembled and installed into the switchboard.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb14.3		
Electrical Distribution Removal Main switchboard buss tie Undervoltage trip		

Lb14.3.D.2 The contractor shall complete a short trial to ensure that all switchboard generator paralleling functionality is normal. The contractor will then simulate a 24VDC backup supply failure and observe the switchboard operation. It is expected that the transformer breakers (2Q04, 3Q02, 2Q06, 3Q04) and emergency switchboard tie breakers (2Q05, 3Q03) will trip on the MSB. Breaker CB-Tie should remain closed. The engineer should then complete a manual ships service start up and put one generator on the board and observe the response. If all is normal then the job is complete.

Lb14.3.E Lock Out/Tag Out

Lb14.3.E.1 The Contractor shall install and remove locks and tags as required for the performance of this specification item. The Chief Engineer or Designate will assist the Contractor in identifying the appropriate electrical isolations. The Contractor shall supply and install their own locking devices and retain all keys during the performance of this specification item. Upon completion of all work the Chief Engineer or Designate shall be in attendance when all locks/tags are removed.

Lb14.3.F Proof Of Performance

Lb14.3.F.1 All work shall be subject to witness by the Chief Engineer or delegate.

Lb14.3.G Deliverables

Lb14.3.G.15.1 - The Contractor shall provide the Chief Engineer with a technical report outlining the results of the work procedures completed. Any anomalies or defects/damage identified during the testing and inspection will be discussed and where possible the Contractor shall provide recommendation(s) for repairs where required.

Lb14.3.G.2 In the event that defects / anomalies have been identified, the Contractor shall provide the Owner with a cost and time estimate for each issue to affect the necessary repairs and shall also indicate the timeline in which such repairs should be completed.

Lb14.3.G.3 All test results, reports, and recommendations shall be supplied to the Owner within ten (10) working days upon completion of the work in both electronic and hardcopy formats.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb14.4		
Electrical Distribution Wire replacement for receptacle stbd maindeck outside.		

LB14.4 WIRE REPLACEMENT FOR RECEPTACLE STBD MAINDECK OUTSIDE.

Lb14.4.A Scope

Lb14.4.A.1 One of the outside receptacle on the outside deck main deck stbd doesn't work. A new wire must be ran and the old wire must be removed.

Lb14.4.B Reference

Document	Title	Inclus
Plan		
6101-32000-01	Single line diagram	oui
Publications		
Standards		
TP 127E	Electrical standards for ships	non
Regulations		
	Lloyd's special Service Craft 2016	
	Loi sur la marine marchande du Canada, 2001	

Lb14.4.C Equipment supplied by owner

Lb14.4.C.1 Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

Lb14.4.D Technical Description

Lb14.4.D.1 The contractor must pass new wire using existing wire feedthroughs.

Lb14.4.D.2 The Contractor shall replace the L5-05-01 cable located between the outer starboard frames 12 and 21. The cable in question passes through the emergency generator compartment and passes in the corridor in the ceilings

Lb14.4.D.3 The new wire must be a marine wire of the same caliber as the one removed.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb14.4		
Electrical Distribution Wire replacement for receptacle stbd maindeck outside.		

Lb14.4.E **Proof of Performance**

Lb14.4.E.1 Inspection

14.4.E.1.1 All work shall be completed to the satisfaction of the Chief Engineer

14.4.E.1.2 The Contractor must supply a report indicating irregularities that were found.

14.4.E.1.3 The Contractor must prove that every wire transit that was open is closed when the work is completed.

14.4.E.1.4 The Contractor must demonstrate that the receptacle is operational.

Lb14.4.E.2 Deliverables

14.4.E.2.1 Drawings/reports

14.4.E.2.2 The Contractor shall 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 shall also send an electronic copy of the report to the person responsible for the vessel's maintenance

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb14.5		
Electrical Distribution BATTERY BOX UPGRADE		

LB14.5 **BATTERY BOX UPGRADE**

Lb14.5.A.1 Remove and relocate the existing battery box support to the new location.

Lb14.5.A.2 There is a brace located approximately half way up the FM200 piping that will have to be cut and extended.

Lb14.5.A.3 Remove an existing nipple and install a short union to facilitate the rotation of the FM200 pipework. This action will make adequate room for the installation of the new battery box.

Lb14.5.A.4 In installations where the battery cables are laying directly on the deck, these cables will require proper support to be installed.

Lb14.5.A.5 It is important to note that with respect to the FM200 piping, no changes other than the installation of a new union and the slight rotation of the existing piping should be all that is needed to complete the modification. If a vessel has an issue which requires more extensive work they shall notify the Class Manager.

Lb14.5.A.6 The objective is to move the batteries as far forward as possible from the transformers.

Lb14.5.B **FM200 Piping Modification**

Lb14.5.B.1 When looking at the original FM 200 piping that comes up through the deck penetration beside the Emergency Switchboard, you will see that the piping is turned outward slightly toward the outer bulkhead. This positioning must be modified to provide enough clearance for the new battery boxes. In order to rotate this piping configuration slightly inwards there is a nipple located at the top of this piping that must be replaced with a shortened union connection. The FM200 piping should be rotated inboard so that the piping with the FM200 text on it as shown in figure 2 is as close as possible to running parallel with the centre line of the vessel. What will restrict how far this can be turned inward will be the final length of the union located at the top of this piping.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb14.5		
Electrical Distribution BATTERY BOX UPGRADE		



Figure 6 Original position of FM200 Piping



Figure 7 FM200 piping rotated inward after union modification



Figure 8 Nipple removed and short union installed

Lb14.5.B.2 The following pics are of the finished product. The battery box is bolted down utilizing two bolts, one of which can be seen in the pic and the centre rod has a spacer to ensure that the batteries do not come in contact with the threaded rod causing chaffing etc. Additionally, all cabling entering the box should be secured together right up into the box so cables don't stray off as is indicated in fig 8 with the black conductor. In figure 9 it looks as though there is no clearance between the pipe and the lid but there are no issues in that regard. The lid is easily removed with no obstructions in way of.

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Lb14.5		
Electrical Distribution BATTERY BOX UPGRADE		



Figure 9 Original position of battery container mount



Figure 10 New position of battery mounting bracket

The next two pics simply give a little closer look at how the battery mounting bracket was secured to the deck.



Figure 11 Closer look at the mounting bracket

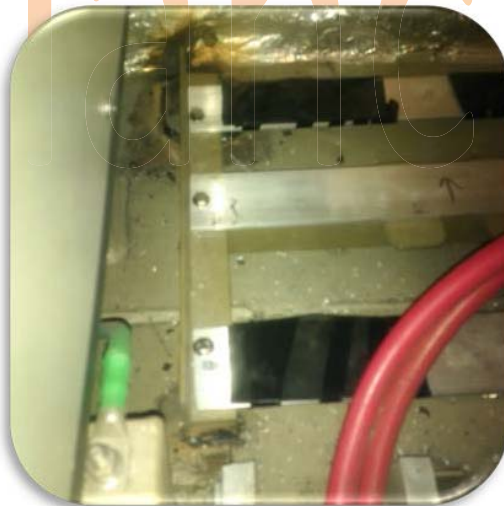


Figure 12 Shows proximity to Emerg Swbrd at left

Lb14.5.B.3 The following pics are of the finished product. The battery box is bolted down utilizing two bolts, one of which can be seen in the pic and the centre rod has a spacer to ensure that the batteries do not come in contact with the threaded rod causing chaffing etc. A rubber grommet must installed along the lip of the box where the cables enter from outside. Additionally, all cabling entering the box should be secured together right up into the box so cables don't stray off as is indicated in fig 8 with the black conductor. In figure 9 it looks as though there is no clearance between

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb14.5		
BATTERY BOX UPGRADE		

the pipe and the lid but there are no issues in that regard. The lid is easily removed with no obstructions in way of.



Figure 13



Figure 14

Lb14.5.B.4 This final configuration addresses issues regarding clearance between the batteries and the transformers and also provides much more mechanical protection for the batteries during work periods when there is engine maintenance in progress.

Lb14.5.B.5 One other item that is worth mentioning regarding the battery modification is an issue with the battery cables leading from the batteries to the diesel. In figure one you will notice that the cable is secured with a metal strap and resting on the deck. Figure 2 shows the cabling resting in a proper wire tray elevated slightly off the deck. The concern here is that the insulation on these battery cables lying directly on the deck will be exposed to whatever fluids accumulate in that area. (Lub Oil, Fuel, Saltwater etc.) As the wire configuration varies slightly from vessel to vessel, corrective action shall be taken to ensure that those vessels having the battery cables resting directly on the deck install proper cable supports or Wire Tray to rectify the oversight.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb14.6		
Shore Power Grounding Monitoring		

LB14.6 **SHORE POWER GROUNDING MONITORING**

Lb14.6.A Objective

Lb14.6.A.1 The objective is to install and commission the Shore Power Grounding Monitoring assembly manufactured by Meg-Alert.

Lb14.6.B reference

T127F	Normes d'électricité régissant les navires	Non
	Lloyd's Rules and Regulations for the Classification of Special Service Craft	
photos	Photos de l'installation Meg alert	
	Règle sur le cadenassage**** section __ du manuel de sécurtié	
IEC61034	Mesure de la densité de fumées dégagées par des câbles brûlant dans des conditions définies Measurement of smoke density of cables burning under defined conditions	
IEC60754	Test on gases evolved during combustion of materials from cables	

Lb14.6.C **The scope of work includes the following tasks:**

Lb14.6.C.1 Meet general requirements for this modification.

Lb14.6.C.2 Install the cabinet, pull the cables and commission the installation.

Lb14.6.C.3 All new cabling must meet Low Smoke (IEC61034-1&2)/Zero Halogen (IEC60754-1&2) requirements.

Lb14.6.C.4 The Contractor must inform the Chief Engineer prior to opening or closing any bulkhead / deck head cable penetrations (transits) to accommodate new cables. Upon completion of all work related to the cable penetrations (transits) the Contractor must inform the Chief Engineer who will complete a final inspection to ensure the integrity of the transit.

Lb14.6.C.5 The Contractor must give the Chief engineer 48 hours prior notice before blacking out the vessel to complete any wiring changes so that alternate arrangements can be made for existing work being carried out onboard.

Lb14.6.C.6 The Contractor must use existing cableways insofar as possible and ensure that power cables are pulled into power cable trays and communications cables are pulled into communication cable trays.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb14.6		
Shore Power Grounding Monitoring		

Lb14.6.C.7 The completed work must comply with the Class Rules and the applicable parts of Ships Electrical Standards TP127E.

Lb14.6.C.8 The Contractor must supply and install their own locks as required for any lockout/tagout action. The contractor must review CCG lockout procedures with the Chief Engineer prior to commencement of any work.

Lb14.6.C.9 The Contractor must tag and identify all new cables and terminations utilizing the same tagging and identification nomenclature presently utilized on the fitted cables and “as fitted” drawings respectively.

Lb14.6.C.10 The Contractor must update any existing Lamacoids related to this project and also the addition of new Lamacoids to identify the configuration changes. Lettering and background colours must be consistent with existent Lamacoids.

Lb14.6.C.11 The Contractor must provide Lamacoids in two sets: one set is in English and the second set is in French language.

Lb14.6.C.12 During the installation process, the Contractor must report to the Chief Engineer any discrepancies the Contractor finds between the approved drawings/specifications and fitted systems involved with the modifications.

Lb14.6.C.13 The Contractor must not make any alterations to the drawings/specifications until the issue has been discussed with CCG.

Lb14.6.C.14 Install the cabinet, pull the cables and commission the installation:

Open the assembly and find the following content:

Wiring diagram of the assembly

Approved drawings

Installation instructions

Operating instructions

WARNING adhesive labels

Plastic bag with some hardware expected to be mounted in Main Switchboard

Lb14.6.C.15 The Contractor must mount the assembly (cabinet) directly on the aft looking plate of the shore power transformer shell (see pic1). When doing this, the Contractor must make on more penetration on the back side of the enclosure and through the shore power transformer shell. Sensing voltage 600V both from primary and secondary of the transformer as well as 600V control power for T02 transformer

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb14.6		
Shore Power Grounding Monitoring		

will run through this backside penetration. The cable gland of adequate size must be supplied and installed by the Contractor.

Lb14.6.C.16 The Contractor must supply cable glands of adequate size and make bottom side cable entry for the following three cables (disregard the five cable shown on the pic1 and pic2):

One cable 2cx14AWG from Main Switchboard STBD Section supplying 120VAC control power;

One cables 2cx14AWG going to control relays CR1.1 and CR1.2 located in STBD GEN section of Main Switchboard;

One cable 2x2cx16AWGgoing to Drop03 of Alarm and Monitoring System located in Machinery Control Room.

Lb14.6.C.17 Control relays CR1.1 and CR1.2 (both PHOENIX CONTACT) must be found in a plastic bag inside the cabinet. They are not intended to be installed inside of the enclosure. The Contractor must mount these two relays on DIN-rail inside of STBD GEN section of Main Switchboard onboard a vessel (see pic3 and pic4). Relays CR1.1 and CR1.2 are intended to control undervoltage coils (UV-coils) of two motorized breakers CB-SPA and CB-SPB which are located in the section adjacent and lower to the STBD GEN section.

Lb14.6.C.18 Electrical connections must be made in accordance with electrical drawings SB04AA-SB05AB rev.15 found inside the cabinet. On the drawing SB04AA this cabinet is referenced as “MEGALER BOX”. Upon completion of installation the Contractor must leave all documentation supplied with the cabinet in the same envelope inside the cabinet for future reference.

Lb14.6.C.19 The Contractor must attached WARNING labels supplied with the cabinet (see pic5) on every piece of equipment (e.g., Shore Power box, Shore Power Transformer, etc.) which might expose a person working on de-energized equipment to 500VDC injected by Meg-Alert ground and monitoring equipment.

Lb14.6.C.20 Upon completion of all work the Contractor, under the supervision of the Chief Engineer must complete a short trial to ensure proper operation of this installation.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb15.1		
Deck Equipment HYDRAULIC SYSTEM FLOW METER INSTALLATION		

LB15 Deck Equipment

LB15.1 HYDRAULIC SYSTEM FLOW METER INSTALLATION

Lb15.1.A scope

Lb15.1.A.1 The Contractor must install two Coast Guard supplied full flow hydraulic flow meters in the supply lines to the bow thruster and crane hydraulic piping circuits on the MSPV's.

Lb15.1.A.2 Equipment Data

- System Specifications
- Supplied flow: 84 GPM max
- Operating Pressure: 4,000 PSI max
- Oil Capacity: 150 US Gal (570 liters)
- Recommended oil: ISO VG 32 Oil

Lb15.1.A.3 There are 2 (two) hydraulic pumps mounted on each main engine gearbox turning at engine speeds of 1000 to 2100 RPM. Pumps are variable displacement, axial piston type with load sensing controls. Pumps are sized to meet requirements of operating the Bow Thruster from 2 Main Engines at 1000 RPM or 1 Main Engine at 2100 RPM. Output from each pump is directed to a distribution manifold from where flow to hydraulic oil users is provided via directional control valves that are controlled from the bridge and the number of hydraulic oil users is dependent on the mode of operation selected.

Lb15.1.A.4 Depending on the task required, the ship could be using 1 or 2 main engines to satisfy the working requirements of the specific mode of operation. Operational Modes (Note: GPM values are theoretical and as per manufacture's recommendations.)

Mode	Enabled Functions	Total Flow (GPM)
Boat Handling	Crane and Bow Thruster	74
Mooring/Anchor/Towing	Capstan, Windlass, Bow Thruster, Towline Reel	68
Fishing	Net/Crab Pot Hauler, Crane and Bow Thruster	73
Bow Thruster	Bow Thruster	49
Alongside	Capstan, Windlass, Crane	32

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb15.1		
Deck Equipment HYDRAULIC SYSTEM FLOW METER INSTALLATION		

Drawings

Drawing Number	Description
AF8400020 sht1	Schematic plans of hydraulic system for bow thruster, capstan, tow line reel, crab hauler and crane
AF 8400020 sht2	Schematic plans of hydraulic system for bow thruster, capstan, tow line reel, crab hauler and crane

Lb15.1.B Technical

Lb15.1.B.1 The Contractor must ensure that all applicable safety precautions including equipment lock outs and tag outs, as per the Fleet Safety Management System, are implemented prior to the start of work.

Lb15.1.B.2 The Contractor, using a proper lock out/tag out procedure, must isolate the supply power at the main switchboard. Where deemed necessary the Contractor and Chief Engineer must place their own locks so breakers remain isolated by means of two different locks.

Lb15.1.B.3 The Contractor must also lock out/tag out the hydraulic power unit (HPU) such that the HPU remains isolated from the system while the piping is modified.

Lb15.1.B.4 The Contractor in conjunction with TA to determine the best suitable place for flow meters installation, keeping in mind the following: ease of accessibility for servicing/ observation/removal based on the piping configuration and adjacent system proximities.

Lb15.1.B.5 The Contractor must drain, contain and dispose of the hydraulic oil from the isolated “Crane” and “Bow Thruster” piping branches. Disposal of used oil must be in accordance with federal, provincial and municipal regulations in effect.

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb15.1		
Deck Equipment HYDRAULIC SYSTEM FLOW METER INSTALLATION		

Lb15.1.B.6 The Contractor and Chief Engineer must jointly identify the sections of the piping to be removed to drain the system branches.

Lb15.1.B.7 Flow meter technical data is identified in the document Hedland-variable liquid flow meter manual.

Lb15.1.B.8 Flow meters shall be installed in horizontal position.

Lb15.1.B.9 The Contractor must source and provide proper hydraulic fittings (as per system max. working parameters) to accommodate opening ports on the flow meters, which are 1 ¼" SAE 20 for inlet and outlet. Fitting to be of Stainless Steel with max.pressure rating of 6000 psi.

Lb15.1.B.10 Note: piping from HPU to crane: Tube, steel, DN 32, 38mm x 3mm, WT DIN2391, ST 35 BK, Max. pressure rating 207 bar.

Lb15.1.B.11 Note: piping from HPU to B/T: Tube, steel, DN32, 38mm x 4mm, WT DIN2391, ST 35 BK,

Lb15.1.B.12 Max. pressure 275 bar.

Lb15.1.B.13 Method of connecting the flow meter fitting to the main hydraulic lines (either welding or threaded connection) to be discussed between TA, IA and The Contractor.

Lb15.1.B.14 The Contractor must manufacture and install 2 (two) support brackets for each flow meter. Brackets must be placed on both sides of the flow meter, within 2" distance from the fittings installed to effectively support the flow meter weight and avoid vibration.

Lb15.1.C **Proof of Performance**

Lb15.1.C.1 Inspections

Lb15.1.C.2 The Contractor must afford the TA the opportunity to inspect the completed work prior to performing any system tests.

Lb15.1.D **Testing/Trials**

Lb15.1.D.1 The Contractor must install the flow meters, re-assemble the hydraulic system to its original condition and confirm system integrity, cleanliness and no leaks from any of the re-worked section of piping. The Contractor must perform a system test to

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb15.2		
Deck Equipment Deliverables		

ensure that flow direction is correct in both flow meters and that they are recording flow rates.

LB15.2 **DELIVERABLES**

Lb15.2.A **Documentation (Reports/Drawings/Manuals)**

Lb15.2.A.1 The Contractor must provide updated “As-Fitted” drawings of the hydraulic system schematic showing the exact installation of the new flow meters installed and any additional fittings installed in the system as a result of this installation. The Contractor shall provide an electronic copy of the updated drawing in AutoCad native DWG format version 2010 or later that must not be password protected. The drawing must be supplied to the TA prior to the close of the contract on a USB stick.

A. Leblanc

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb18.1		
COMMUNICATION AND NAVIGATION SYSTEMS INSPECTION OF THE VESSEL'S RADIO		

LB18 COMMUNICATION AND NAVIGATION **SYSTEMS**

LB18.1 INSPECTION OF THE VESSEL'S RADIO

Lb18.1.A.1 Provide a lump-sum price for inspecting the vessel's radio. The price shall include the cost of transport, accommodation and subsistence. Provide a fee schedule in case there is additional work.

Lb18.1.A.2 Provide material and labour for inspecting the radio so that a checklist can be supplied for obtaining a radio inspection certificate from the Lloyd Register classification society. The zones covered must be for the Canadian coastlines and the Great Lakes Basin, in accordance with the *Ship Station (Radio) Technical Regulations, 1999*.

Lb18.1.A.3 The radio checklist is to be given before the end of the work period to the crew and an electronic copy sent to the technical authority.

Lb18.1.A.4 The GMDSS battery test shall be 8 hours.

Lb18.1.A.5 The Contractor must provide proof that Lloyd Register has authorized the Contractor to do the work.

Lb18.1.B List and type of the Vessel's Radios :

Radio	Model	Fabricant	Note
VHF Radiotelephone #1	RT-5022	Sailor	
VHF Radiotelephone #2	RT-5022	Sailor	
MF Radio #1	Series 5000	Sailor	
INMARSAT SES	TT-3606E	Sailor	
NAVTEX	NX-700	Furund	
SART #1	TRON SART20	Jotron	
SART #2	TRON SART20	Jotron	
EPIRB	TRON 40SMK11	Jotron	Registration # : A78D406774002E5
VHF DF	OAR4400	Cubic	
VHF #1 (portable)	SP3520	Sailor	
VHF #2 (portable)	SP3520	Sailor	
VHF #3 (portable)	SP3520	Sailor	
Radar #1	Visionmaster	Sperry	
Radar #2	Visionmaster	Sperry	

Spec Item:	Spec number: 3775-17IN341	TCMS Field #:
Lb18.1		
COMMUNICATION AND NAVIGATION SYSTEMS INSPECTION OF THE VESSEL'S RADIO		

Reciever for global navigation satellite systems and terrestrial radionavigation systems	GPS SAAB R4	SAAB	
AIS	AIS R4	SAAB	

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