



**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

<b>Title - Sujet</b> Winter Work HERO Ships (2) Sorel	
<b>Solicitation No. - N° de l'invitation</b> F3775-16N918/A	<b>Date</b> 2017-01-20
<b>Client Reference No. - N° de référence du client</b> F3775-16N918	<b>GETS Ref. No. - N° de réf. de SEAG</b> PW-\$QCL-036-17024
<b>File No. - N° de dossier</b> QCL-6-39349 (036)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2017-02-14</b>	
<b>Time Zone</b> Fuseau horaire Heure Normale du l'Est HNE	
<b>F.O.B. - F.A.B.</b> Specified Herein - Précisé dans les présentes	
<b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input type="checkbox"/> <b>Other-Autre:</b> <input checked="" type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Gagnon, Mathieu	<b>Buyer Id - Id de l'acheteur</b> qcl036
<b>Telephone No. - N° de téléphone</b> (418) 649-2883 ( )	<b>FAX No. - N° de FAX</b> (418) 648-2209
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> Pêches et Océans Canada-Garde Côtière 101, BOUL CHAMPLAIN QUEBEC Québec G1K7Y7 Canada	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

<b>Delivery Required - Livraison exigée</b> Voir doc	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> Raison sociale et adresse du fournisseur/de l'entrepreneur	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/</b> <b>de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

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## **PART 1 - GENERAL INFORMATION**

### **1.1 Introduction**

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

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

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

### **1.2 Summary**

- (i) The requirement is:
  - a) To carry out the ship repair work regarding the Canadian Coast Guard Ships (C.C.G.S.) Caporal Kaeble and (C.C.G.S.) A. Leblanc during the winter layout at the Sorel Wharf of the Canadian Coast Guard Base, Sorel, QC, in accordance with the associated Technical Specifications detailed in the Requirement attached as Annex A.
  - b) To carry out any approved unscheduled work not covered in paragraph a) above.
- (ii) The requirement is exempt from the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), Annex 4 and the North American Free Trade Agreement (NAFTA), Chapter 10 Annex 1001.2b Paragraph 1, however, it is subject to the Agreement on Internal Trade (AIT).

### **1.3 Debriefings**

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

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## **PART 2 - BIDDER INSTRUCTIONS**

### **2.1 Standard Instructions, Clauses and Conditions**

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

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

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

### **2.2 Submission of Bids**

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

### **2.3 Enquiries - Bid Solicitation**

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

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

### **2.4 Applicable Laws**

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

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

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## **2.5 Bidders' Conference**

A bidders' Conference chaired by the Contracting Authority will be convened on board vessel CCGS Caporal Kaeble at 10:00 am, February 1, 2017. The vessel will be moored at Fisheries and Oceans Canada – Coast Guard Wharf, at 15, du Prince Street, Sorel-Tracy (QC) J3P 4J4. **An attendance confirmation is required before 11:00 am, January 30, 2017.**

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

## **2.6 Viewing - Vessel**

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

## **2.7 Proposed Work Period**

Work is to commence and be completed as follows:

Start: From the Contract award date

End: April 1, 2017

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

## **2.8 Docking Facility *(Not used)***

## **2.9 List of Proposed Sub-contractors**

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

## **2.10 Quality Plan - Solicitation *(Not used)***

**2.11 Inspection and Test Plan** *(Not used)*

**2.12 Vessel Refit, Repair or Docking - Cost**

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

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

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

## **PART 3 - BID PREPARATION INSTRUCTIONS**

### **3.1 Bid Preparation Instructions**

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

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

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

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

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

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

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

#### **Section I: Management Bid**

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

#### **Section II: Financial Bid**

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

#### **Section III: Certification Requirements**

Bidders must submit the certifications required under Part 5.

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### **3.1.2      **Unscheduled Work and Evaluation Price****

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

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

**PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION****4.1 Evaluation Procedures**

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

**4.1.1 Financial Bid**

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

**4.1.2 Mandatory Criteria**

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

**4.1.3 Table of Mandatory Requirements to be met by bid closing**

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

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

**4.1.4 Other information upon request only**

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

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

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#### 4.1.5 Deliverables after Contract award

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

#### 4.2 Basis of Selection

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

#### 4.3 Public Bid Opening

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

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

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## **PART 5 - CERTIFICATIONS**

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

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

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

### **5.1 Certifications Required with the Bid**

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

#### **5.1.1 Integrity Provisions - Declaration of Convicted Offences**

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

#### **5.2. Mandatory Certifications Required Precedent to Contract Award**

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

##### **5.2.1 Code of Conduct and Certifications - Related documentation**

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

##### **5.2.2 Federal Contractors Program for Employment Equity - Bid Certification**

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

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[http://www.esdc.gc.ca/en/jobs/workplace/human\\_rights/employment\\_equity/federal\\_contractor\\_program.page?&\\_ga=1.229006812.1158694905.1413548969](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.

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## **PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS**

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

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

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

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

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

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

At bids closing date the Bidder must provide a letter from an insurance broker or an insurance company licensed to operate in Canada stating that the Bidder, if awarded a contract as a result of the bid solicitation, can be insured in accordance with the Insurance Requirements specified in Annex "C".

## **PART 7 - RESULTING CONTRACT CLAUSES**

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

### **1. Requirement**

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

### **2. Standard Clauses and Conditions**

All clauses and conditions identified in the Contract by number, date and title are set out in the *Standard Acquisition Clauses and Conditions* Manual issued by Public Works and Government Services Canada (PWGSC). The Manual is available on the PWGSC Website:

<http://sacc.pwgsc.gc.ca/sacc/index-e.jsp> .

#### **2.1 General Conditions**

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

Section 22 of 2030 is amended in Annex E Warranty.

#### **2.2 Supplemental General Conditions**

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

### **3. Security Requirement**

There is no security requirement associated with this Statement of Work

### **4. Term of Contract**

#### **4.1 Contract period**

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

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## 4.2 Work period

Work is to commence and be completed as follows:

Start: From the Contract award date

End: April 1, 2017

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

## 5. Authorities

### 5.1 Contracting Authority

The Contracting Authority for the Contract is:

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

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

### 5.2 Technical Authority

The Technical Authority for the Contract is:

*Name will be determined at Contract award*

Telephone: \_\_\_\_\_

Facsimile: \_\_\_\_\_

E-mail address: \_\_\_\_\_

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

### **5.3 Inspection Authority/Inspector**

The Inspection Authority for the Contract is:

See section 5.2

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

## **6. Payment**

### **6.1 Basis of Payment - Firm Price**

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

### **6.2 Payment Terms - Progress Payments**

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



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## 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)*

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## **15. Sub-contracts and Sub-contractor List**

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

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

## **16. Work Schedule and Reports**

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

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

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

## **17. Insulation Materials - Asbestos Free**

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

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

## **19. Trade Qualifications**

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

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

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

## **22. Quality Control Plan (*Not used*)**

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

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

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

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

## **23. Welding Certification**

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

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

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

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

## **24. Environmental Protection**

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

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

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

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

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

**26. Procedure for Design Change or Additional Work**

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

**26.1 Price Breakdown:**

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

**26.2 Pro-rated Prices:**

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

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

**28. Inspection and Test Plan**

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

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

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

**29. Vessel Custody** *(Not used)*

**30. Vessel manned Refits**

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

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### **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.

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**ANNEX A**

**REQUIREMENT - SPECIFICATION**

**See electronic Annex.**

**ANNEX B**

**BASIS OF PAYMENT FIRM PRICE**

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

**B1 Contract Firm Price**

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

**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.

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### 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.

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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.

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## 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.

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## ANNEX E

### WARRANTY

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

#### **E.1 Section 22 Warranty**

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

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

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

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

## **E.2 Warranty Procedures**

### **E2.1 Scope**

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

### **E2.2 Definition**

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

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

### **E2.3 Warranty Conditions**

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

### **E2.4 Reporting Failures With Warranty Potential**

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

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## 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.

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## **E2.6 Liability**

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

## **E2.7 Alongside Period For Warranty Repairs and Checks**

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

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

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



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

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

Date of Corrective Action - Date de modalité de reprise

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Client Name and Signature - Nom et signature de client

Date

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

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Signature – Signature

Date

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**ANNEX F**

**VESSEL CUSTODY**

**(NOT USED)**

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**Annex G**

**SECURITY REQUIREMENTS CHECK LIST**

**(NOT USED)**

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**ANNEX H**

**PROJECT MANAGEMENT SERVICES**

**(NOT USED)**

**ANNEX I**

**FINANCIAL BID PRESENTATION SHEET**

**I1 Price for Evaluation**

<b>A)</b>	<b>Known Work</b> For work as stated in Part 1 Clause 2a, Specified in Annex “A” and detailed in the Price per Item Sheet, Appendix 1 of this Annex, for a FIRM PRICE of:	_____ \$
<b>B)</b>	<b>Unscheduled Work</b> 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: 550 person hours X \$_____ per hour for a PRICE of: <b>See Note I2.1 and I2.2 below.</b>	_____ \$
<b>C)</b>	<b>EVALUATION PRICE</b> GST Excluded, [A + B]: <div style="text-align: right;">For an EVALUATION PRICE of :</div>	_____ \$

**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.

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### 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.

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

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

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

#### **I6 Vessel Transfer Costs**

Not used

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**APPENDIX 1 OF ANNEX I**

**Scheduled Work:**

<b>PRICE PER ITEM SHEETS</b>		
<b>Item</b>	<b>Description – A) SCHEDULED WORK</b>	<b>Firm Price</b>
<b>G1 &amp; G2</b>	<b>General remarks</b>	\$ _____
<b>G3</b>	<b>Report off added and removed weight from the ships</b>	\$ _____
<b>KB10</b>	<b>C.C.G.S. Caporal Kaeble – Safety and Security Equipment</b>	\$ _____
<b>KB11</b>	<b>C.C.G.S. Caporal Kaeble – Hull and Related Structure</b>	\$ _____
<b>KB13</b>	<b>C.C.G.S. Caporal Kaeble – Vessel’s Generation of Electrical Power</b>	\$ _____
<b>KB14</b>	<b>C.C.G.S. Caporal Kaeble – Power Distribution</b>	\$ _____
<b>KB14</b>	<b>C.C.G.S. Caporal Kaeble – Communication and Navigation Systems</b>	\$ _____
<b>LB10</b>	<b>C.C.G.S. A. Leblanc – Safety and Security Equipment</b>	\$ _____
<b>LB11</b>	<b>C.C.G.S. A. Leblanc – Hull and Related Structure</b>	\$ _____
<b>LB13</b>	<b>C.C.G.S. A. Leblanc – Vessel’s Generation of Electrical Power</b>	\$ _____
<b>LB14</b>	<b>C.C.G.S. A. Leblanc – Power Distribution</b>	\$ _____
<b>LB14</b>	<b>C.C.G.S. A. Leblanc – Communication and Navigation Systems</b>	\$ _____
<b>A) SCHEDULED WORK - TOTAL FIRM PRICE</b>		<b>\$ _____</b>

**Optional Work:**

<b>PRICE PER ITEM SHEETS</b>		
<b>Item</b>	<b>Description – B) OPTIONAL WORK</b>	<b>Firm Price</b>
<b>KB10.4, KB10.6, LB10.4 &amp; LB10.6</b>	<b>C.C.G.S. Caporal Kaeble &amp; C.C.G.S. A. Leblanc – Optional Safety and Security Equipment</b>	\$ _____
<b>KB11.4</b>	<b>C.C.G.S. Caporal Kaeble – Optional Addition of Limber holes in the engine room</b>	\$ _____
<b>LB 11.2</b>	<b>C.C.G.S. A. Leblanc – Optional Addition of Rail System</b>	\$ _____
<b>LB 11.6</b>	<b>C.C.G.S. A. Leblanc – Optional Addition of Limber holes in the engine room</b>	\$ _____
<b>B) OPTIONAL WORK - TOTAL FIRM PRICE</b>		<b>\$ _____</b>

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

The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described at Annex A of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment. The Contracting Authority may exercise the option within **10 days** after beginning of work by sending a written notice to the Contractor.

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**Summary:**

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

**Remark to Bidders:**

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

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**ANNEX J**

**Scheduled Work:**

PRICING DATA SHEETS		
Item	Description – A) SCHEDULED WORK – CCGS CAPORAL KAEBLE & A. LEBLANC	Firm Price
<b>G1 &amp; G2</b>	<b>General Remarks</b> (Bidders can enter \$0.00 or indicate 'included' if the fees for this item are distributed in each of the items below. In case the fees are not distributed an amount must be indicated in the price box.)	\$ _____
<b>G3</b>	<b>Report on weight changes</b> (Overheads fees related to this item must be distributed in each sub items.)	
	Report for the C.C.G.S Caporal Kaeble  <b>Total Caporal Kaeble = \$ _____</b>	
	Report for the C.C.G.S. A. Leblanc  <b>Total A. Leblanc = \$ _____</b>	
	<b>Total for G3 : \$ _____</b>	
<b>KB</b>	<b>C.C.G.S. CAPORAL KAEBLE</b>	
<b>KB10</b>	<b>Safety and Security Equipment</b> (Overheads fees related to this item must be distributed in each sub items.)	
	KB10.1 Annual Inspection of Rescue Zodiac  Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____	
	<b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____	
	<b>Total for item KB10.1 : \$ _____</b>	
	KB10.2 Fuel Hose Certification  Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____	
	<b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____	
	<b>Total for item KB10.2 : \$ _____</b>	
	KB10.3 Inspection of Zodiac Lifting Hooks  Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____	
	<b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____	
	<b>Total for item KB10.3 : \$ _____</b>	

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**PRICING DATA SHEETS**

Item	Description – A) SCHEDULED WORK – CCGS CAPORAL KAEBLE & A. LEBLANC	Firm Price
	<p>KB10.4 Inspection of portable fire extinguishers Provide a price for known extinguisher (based on due dates provided in the list). Unit prices for additional extinguishers are to be included in section B) Optional Work.</p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item KB10.4 : \$ _____</b></p>	
	<p>KB10.5 Fire Detection System</p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item KB10.5 : \$ _____</b></p>	
	<p>KB10.6 Annual Inspection of the Fixed Fire Firefighting System Provide a price for known extinguisher (based on due dates provided in the list). Unit prices for additional extinguishers are to be included in section B) Optional Work.</p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item KB10.6 : \$ _____</b></p>	
	<p>KB10.7 Annual Inspection of the lifeboat davit</p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item KB10.7 : \$ _____</b></p>	
<b>Total for KB10 : \$ _____</b>		

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**PRICING DATA SHEETS**

Item	Description – A) SCHEDULED WORK – CCGS CAPORAL KAEBLE & A. LEBLANC	Firm Price
<b>KB11</b>	<b>Hull and Related Structure</b> (Overheads fees related to this item must be distributed in each sub items.)	
	<b>KB11.1 Multi Cable Transits</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ <b>Total for item KB11.1 : \$ _____</b>	
	<b>KB11.2 Addition of a rail system for the Wheelhouse</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ <b>Total for item KB11.2 : \$ _____</b>	
	<b>KB11.3 Addition of a vent for the Rope Locker</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ <b>Total for item KB11.3 : \$ _____</b>	
	<b>KB11.5 Addition of a splash guard for transformer banks</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ <b>Total for item KB11.5 : \$ _____</b>	
	<b>KB11.6 Installation of a Heated Vent on the Potable Water Tank Vents</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ <b>Total for item KB11.6 : \$ _____</b>	
	<b>Total for KB11 : \$ _____</b>	

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**PRICING DATA SHEETS**

Item	Description – A) SCHEDULED WORK – CCGS CAPORAL KAEBLE & A. LEBLANC	Firm Price
<b>KB13</b>	Vessel's Generation of Electrical Power (Overheads fees related to this item must be distributed in each sub items.)	
	<b>KB13.1 Annual Maintenance of Generator Alternators</b>  Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Total for item KB13.1: \$ _____</b>	
	<b>Total for KB13 : \$ _____</b>	
<b>KB14</b>	Power Distribution (Overheads fees related to this item must be distributed in each sub items.)	
	<b>KB14.1 Check Tightness of the Power Supply Panel Connectors</b>  Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Total for item KB14.1: \$ _____</b>	
	<b>KB14.2 Checking the insulation of various electrical components (MEGGER TEST)</b>  Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Total for item KB14.2: \$ _____</b>	
	<b>KB14.3 Pump Emergency Power Modification</b>  Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Total for item KB14.3: \$ _____</b>	
	<b>Total for KB14 : \$ _____</b>	

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**PRICING DATA SHEETS**

Item	Description – A) SCHEDULED WORK – CCGS CAPORAL KAEBLE & A. LEBLANC	Firm Price
<b>KB18</b>	Communication and Navigation Systems (Overheads fees related to this item must be distributed in each sub items.)	
	KB18.1 Inspection of the Vessel's Radios  Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____	
	<b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____	
	<b>Total for item KB18: \$ _____</b>	
<b>Total for KB18 : \$ _____</b>		
<b>TOTAL FOR THE C.C.G.S. CAPORAL KAEBLE = \$ _____</b>		
<b>LB</b>	<b>C.C.G.S. A. LEBLANC</b>	
<b>LB10</b>	Safety and Security Equipment (Overheads fees related to this item must be distributed in each sub items.)	
	LB10.1 Annual Inspection of Rescue Zodiac  Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____	
	<b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____	
	<b>Total for item LB10.1 : \$ _____</b>	
	LB10.2 Fuel Hose Certification  Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____	
	<b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____	
	<b>Total for item LB10.2 : \$ _____</b>	
	LB10.3 Inspection of Zodiac Lifting Hooks  Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____	
	<b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____	
	<b>Total for item LB10.3 : \$ _____</b>	

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**PRICING DATA SHEETS**

Item	Description – A) SCHEDULED WORK – CCGS CAPORAL KAEBLE & A. LEBLANC	Firm Price
	<p>LB10.4 Inspection of portable fire extinguishers Provide a price for known extinguisher (based on due dates provided in the list). Unit prices for additional extinguishers are to be included in section B) Optional Work.</p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b></p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item LB10.4 : \$ _____</b></p>	
	<p>LB10.5 Fire Detection System</p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b></p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item LB10.5 : \$ _____</b></p>	
	<p>LB10.6 Annual Inspection of the Fixed Fire Firefighting System Provide a price for known extinguisher (based on due dates provided in the list). Unit prices for additional extinguishers are to be included in section B) Optional Work.</p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b></p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item LB10.6 : \$ _____</b></p>	
	<p>LB10.7 Annual Inspection of the lifeboat davit</p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b></p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item LB10.7 : \$ _____</b></p>	
	<b>Total for LB10 : \$ _____</b>	

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**PRICING DATA SHEETS**

Item	Description – A) SCHEDULED WORK – CCGS CAPORAL KAEBLE & A. LEBLANC	Firm Price
<b>LB11</b>	Hull and Related Structure (Overheads fees related to this item must be distributed in each sub items.)	
	<b>LB11.1 Multi Cable Transits</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ <b>Total for item LB11.1 :</b> \$ _____	
	<b>LB11.3 Command Center Modification</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ <b>Total for item LB11.3 :</b> \$ _____	
	<b>LB11.4 Addition of a vent for the Rope Locker</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ <b>Total for item LB11.3 :</b> \$ _____	
	<b>LB11.5 General Welding Repairs</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ <b>Total for item LB11.5 :</b> \$ _____	
	<b>LB11.7 Addition of a splash guard for transformer banks</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____  <b>Subcontracting (if applicable)</b> Mobilisation / Demobilisation = \$ _____ Materials, equipment and consumables = \$ _____ Labour ; \$ _____ /hour X _____ hours = \$ _____ <b>Total for item LB11.7 :</b> \$ _____	\$ _____

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**PRICING DATA SHEETS**

Item	Description – A) SCHEDULED WORK – CCGS CAPORAL KAEBLE & A. LEBLANC	Firm Price
	<p>LB11.8 Installation of a Heated Vent on the Potable Water Tank Vents</p> <p style="padding-left: 40px;">Mobilisation / Demobilisation = \$ _____</p> <p style="padding-left: 40px;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b></p> <p style="padding-left: 40px;">Mobilisation / Demobilisation = \$ _____</p> <p style="padding-left: 40px;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item LB11.8 : \$ _____</b></p>	
<b>Total for LB11 :</b>		
<b>LB13</b>	<p>Vessel’s Generation of Electrical Power (Overheads fees related to this item must be distributed in each sub items.)</p> <p>LB13.1 Annual Maintenance of Generator Alternators</p> <p style="padding-left: 40px;">Mobilisation / Demobilisation = \$ _____</p> <p style="padding-left: 40px;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b></p> <p style="padding-left: 40px;">Mobilisation / Demobilisation = \$ _____</p> <p style="padding-left: 40px;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item LB13.1: \$ _____</b></p>	
<b>Total for LB13 :</b>		\$ _____
<b>LB14</b>	<p>Power Distribution (Overheads fees related to this item must be distributed in each sub items.)</p> <p>LB14.1 Check Tightness of the Power Supply Panel Connectors</p> <p style="padding-left: 40px;">Mobilisation / Demobilisation = \$ _____</p> <p style="padding-left: 40px;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b></p> <p style="padding-left: 40px;">Mobilisation / Demobilisation = \$ _____</p> <p style="padding-left: 40px;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item LB14.1: \$ _____</b></p> <p>LB14.2 Checking the insulation of various electrical components (MEGGER TEST)</p> <p style="padding-left: 40px;">Mobilisation / Demobilisation = \$ _____</p> <p style="padding-left: 40px;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b></p> <p style="padding-left: 40px;">Mobilisation / Demobilisation = \$ _____</p> <p style="padding-left: 40px;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item LB14.2: \$ _____</b></p>	
<b>Total for LB14 :</b>		\$ _____

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**PRICING DATA SHEETS**

Item	Description – A) SCHEDULED WORK – CCGS CAPORAL KAEBLE & A. LEBLANC	Firm Price
	<p>LB14.3 Pump Emergency Power Modification</p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b></p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item LB14.3: \$ _____</b></p> <hr/> <p>LB14.4 Wire Replacement for receptacle Starboard Main Deck outside</p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b></p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item LB14.4: \$ _____</b></p> <p style="text-align: right;"><b>Total for LB14 : _____</b></p>	
<b>LB18</b>	<p>Communication and Navigation Systems (Overheads fees related to this item must be distributed in each sub items.)</p> <p>LB18.1 Inspection of the Vessel's Radios</p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b></p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item LB18: \$ _____</b></p> <p style="text-align: right;"><b>Total for LB18 : _____</b></p>	
<b>TOTAL FOR THE C.C.G.S. A. LEBLANC =</b>		<b>\$ _____</b>
<b>TOTAL A) FIRM PRICE FOR SCHEDULED WORK</b>		
<b>C.C.G.S. CAPORAL KAEBLE + C.C.G.S. A. LEBLANC =</b>		<b>\$ _____</b>

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**Optional Work:**

<b>PRICING DATA SHEETS</b>		
<b>Item</b>	<b>Description – B) OPTIONAL WORK – C.C.G.S. CAPORAL KAEBLE &amp; A. LEBLANC</b>	<b>Firm Price</b>
<b>KB10 &amp; LB10</b>	<p>Safety and Security Equipment (Overheads fees related to this item must be distributed in each sub items.)</p>	
	<p>Inspection of portable fire extinguishers – Refilling of cylinders and additional hydrostatic tests. (Price for quantities from 1 to 5 each – Final amount to be prorated)</p> <p><u>Refilling of extinguishers</u>            extinguishers 2.75 lbs ABC; _____ \$ X 5 extinguishers = _____ \$            extinguishers 5 lbs ABC; _____ \$ X 5 extinguishers = _____ \$            extinguishers 10 lbs ABC; _____ \$ X 5 extinguishers = _____ \$            extinguishers 20 lbs ABC; _____ \$ X 5 extinguishers = _____ \$            extinguishers 20 lbs BC; _____ \$ X 5 extinguishers = _____ \$            extinguishers 5 lbs CO<sub>2</sub>; _____ \$ X 5 extinguishers = _____ \$            extinguishers 10 lbs CO<sub>2</sub>; _____ \$ X 5 extinguishers = _____ \$            extinguishers 15 lbs CO<sub>2</sub>; _____ \$ X 5 extinguishers = _____ \$            extinguishers 20 lbs CO<sub>2</sub>; _____ \$ X 5 extinguishers = _____ \$            extinguishers 6 litres of foam type K; _____ \$ X 5 extinguishers = _____ \$</p> <p><u>Hydrostatic tests</u>            on cylinder 9.2.1 AFFF; _____ \$ X 5 tests = _____ \$            low pressure on cylinders powder 2.5 to 30 lbs; _____ \$ X 5 tests = _____ \$            High pressure on cylinder CO<sub>2</sub>; _____ \$ X 5 tests = _____ \$            on cylinders foam type K; _____ \$ X 5 tests = _____ \$</p> <p style="text-align: right;"><b>Total for this item: \$ _____</b></p>	
	<p>Annual Inspection of the Fixed Fire Firefighting System – Refilling of cylinders and additional hydrostatic tests. (Price for quantities from 1 to 5 each – Final amount to be prorated)</p> <p><u>Refilling of cylinder</u>            cylinder CO<sub>2</sub> 100 lbs ; _____ \$ X 5 cylinders = _____ \$            cylinder CO<sub>2</sub> 75 lbs _____ \$ X 5 cylinders = _____ \$            cylinder CO<sub>2</sub> 50 lbs _____ \$ X 5 cylinders = _____ \$            cylinder CO<sub>2</sub> 15 lbs _____ \$ X 5 cylinders = _____ \$            cylinder CO<sub>2</sub> 10 lbs _____ \$ X 5 cylinders = _____ \$</p> <p><u>Hydrostatic tests</u>            Flexible hoses hydrostatic tests; _____ \$ X 5 hoses = _____ \$            High pressure on cylinder 50-75-100 lbs CO<sub>2</sub>; _____ \$ X 5 cylinders = _____ \$            High pressure cylinder 10-15 lbs CO<sub>2</sub>; _____ \$ X 5 cylinders = _____ \$</p> <p style="text-align: right;"><b>Total for this item : \$ _____</b></p>	
<b>Total for optional KB10 &amp; LB10 :</b>		<b>\$ _____</b>

Solicitation No – N° de l'invitation  
F3775-16N918/A

Amd. No. – N° de la modif.

Buyer ID – id de l'acheteur  
qcl 036

Client Ref No. – N° de réf. du client  
F3775-16N918

File No. – N° du dossier  
QCL-6-39349

**PRICING DATA SHEETS**

Item	Description – B) OPTIONAL WORK – C.C.G.S. CAPORAL KAEBLE & A. LEBLANC	Firm Price
<b>KB11</b>	<p>Hull and Related Structure (Overheads fees related to this item must be distributed in each sub items.)</p> <p>KB11.4 Optional Addition of Limber Holes in Main Engine Room on CCGS Caporal Kaeble</p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b></p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item KB11.4 : \$ _____</b></p> <p style="text-align: right;"><b>Total for optional KB11 : \$ _____</b></p>	
<b>LB11</b>	<p>Hull and Related Structure (Overheads fees related to this item must be distributed in each sub items.)</p> <p>LB11.2 Addition of a rail system for the Wheelhouse</p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Rail System \$ _____ x 3 = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b></p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item LB11.2 : \$ _____</b></p> <p>LB11.6 Optional Addition of Limber Holes in Main Engine Room on CCGS A. Leblanc</p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p><b>Subcontracting (if applicable)</b></p> <p style="text-align: right;">Mobilisation / Demobilisation = \$ _____</p> <p style="text-align: right;">Materials, equipment and consumables = \$ _____</p> <p>Labour ; \$ _____ /hour X _____ hours = \$ _____</p> <p style="text-align: right;"><b>Total for item LB11.6 : \$ _____</b></p> <p style="text-align: right;"><b>Total for optional LB11 : \$ _____</b></p>	
<b>TOTAL B) FIRM PRICE FOR OPTIONAL WORK =</b>		<b>\$ _____</b>

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

The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described at Annex A of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment. The Contracting Authority may exercise the option within **10 days** after beginning of work by sending a written notice to the Contractor.

F3774- 16IN918

# **Annual winter maintenance Sorel 2017**

N.G.C.C. CAPORAL KAEBLE (C 181)

N.G.C.C. A. LEBLANC (A 028)

Spec number : 3774-16IN918

Date : 2016-12-28

Version 0

Prepared by : Ingénierie navale

101, Boul. Champlain

Québec (QC)

G1K 7Y7

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## **G 1.0 LIST OF ACRONYMS**

AMR	Auxiliary Machine Room
CA	Contracting Authority (PWGSC)
CCG	Canadian Coast Guard
CLC	Canadian Labour Code
CPM	Contractor Provided Material
CSA	Canadian Standards Association - CSA
CWB	Canadian Welding Bureau
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
MSDS	Material Safety Data Sheet
OAL	Overall length
OHS	Occupational Health and Safety
PWGSC	Public Works and Government Services Canada
SSMS	Safety and Security Management System
TA	Technical Authority - Owner's Representative (CCG)
TBS	Treasury Board Secretariat of Canada
TCMS	Transport Canada Marine Safety
TSR	Technical Services Representative
WHMIS	Workplace Hazardous Materials Information System

## 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
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.

**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.

**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.**

**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 2.10.1 CCG 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.**

**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.

**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.**

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

**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.

**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 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.

## **G 3.0 REPORT OF WEIGHT ADDED AND REMOVED**

### **G 3.1.1 Scope**

**G 3.1.2 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 must be given to the technical authority.**

N.G.C.C. CAPORAL KAEBLE (C 181)		
Agent de projet :	Courriel :	Bur. : 418-648-5440
Isabelle Couillard-Desjardins	Isabelle.couillard-desjardins@dfo-mpo.gc.ca	

## **KB10    Safety and Security Equipment**

### **KB10.1    ANNUAL INSPECTION OF RESCUE ZODIAC**

#### Kb10.1.A    **Scope**

**Kb10.1.A.1**    Have an authorized Zodiac representative complete the annual certification of the Zodiac lifeboat. Supply round-trip transportation.

#### Kb10.1.B    **Technical Description**

**Kb10.1.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.

#### Kb10.1.C    **Boat description :**

Ribo 420
Serial no. :XDCC2244AF010
Date of manufacture: 06-2010
Out board motor : Yamaha, 25HP
Engine Serial no.: MX-148204-0810

#### Kb10.1.D    **Deliverable**

**Kb10.1.D.1**    Provide the certificate and a full report on the inspection and repairs.

### **KB10.2    FUEL HOSE CERTIFICATION**

**Kb10.2.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.

**Kb10.2.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.

**Kb10.2.A.3**    Operating pressure of the hoses is 2 bars.

**Kb10.2.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.

**KB10.2.A.5** The Contractor must provide the Chief Engineer with a certificate for each hose and a copy to the technical authority

### **KB10.3 INSPECTION OF ZODIAC LIFTING HOOK**

**Kb10.3.A.1** The Contractor must have a representative approved by transport Canada to conduct an annual certification of the release hooks on the Zodiacs. The crew will dismantle the hooks.

**Kb10.3.A.2** The Contractor must supply proof that the representative is approved to do the work by Transport Canada.

**Kb10.3.A.3** Here is the list of hooks to be inspected:

10.3.A.3.1 2 FAST RSQ lifting hook serial number : 0081 and 0076

10.3.A.3.2 One NEM hook serial number: 5871.

**Kb10.3.A.4** The Contractor must provide an inspection certificate and an inspection report for each hook. The vessel must receive these and a copy must be given to the technical authority.

### **KB10.4 PORTABLE FIRE EXTINGUISHERS INSPECTION**

#### **Kb10.4.A Scope**

**Kb10.4.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.

#### **Kb10.4.B References**

**Kb10.4.B.1** Reference drawings/data plate information

10.4.B.1.1 NFPA10 Standard for Portable Fire Extinguisher

#### **Kb10.4.C List of types of vessel fire extinguishers to be inspected**

	<b>Navigation bridge</b>
	<b>Main deck</b>
	<b>Lower deck</b>
	<b>Boating equipment</b>
	<b>Supplementary</b>

No. no.	Year	Location	Brand & model	Type	Serial no.	Min. weight (lbs)	Last 6-year maintenance	Last hydrostatic test hydrostatic test
1		RCMP room	Amerex	Powder ABC	AV92926	16lb10oz	10/2011	10/2011
3		RCMP room	Amerex	CO2 BC	AB881107	33lb6oz	02/2016	02/2016
4		Wheelhouse	Amerex	Powder ABC	AV93258	16lb10z	10/2011	10/2011
33		Starboard battery compartment	Amerex	Class K	AD18417	20lb5oz	10/2012	10/2012
34		Port side battery compartment	Amerex	Foam AB	AC641029	27lb9oz	03/2015	03/2015
		Cmpt Port fwd wheelhouse	Amerex	Powder ABC	AW41389	33lb11oz	09/2011	09/2011
		Cmpt port fwd wheelhouse	Amerex	Powder ABC	BB421215	33lb11oz	02/2012	02/2012
		Cmpt port fwd wheelhouse	Amerex	Powder ABC	12924993	8lb5oz	02/2016	02/2016
6		Food shop in passageway	Amerex	Foam AB	AC790026	27lb9oz	02/2016	02/2016
8		Galley	Amerex	Class K	AD18416	20lb5oz	10/2012	10/2012
9		Passageway commanding officer, chief engineer	Amerex	Foam AB	AC641003	27lb9oz	03/2015	03/2015
12		Elec. equip. room	Amerex	CO2 BC	AB881069	33lb6oz	02/2016	02/2016

13		Emergency generator	Amerex	CO2 BC	AB881086	33lb6oz	02/2016	02/2016
14		Emergency generator	Amerex	Powder ABC	AV92945	16lb10oz	10/2011	10/2011
31		Exterior starboard	Amerex	Powder ABC	AV93417	16lb10oz	10/2011	10/2011
		Aft port side fueling station	Amerex	Foam AB	AD16062	27lb9oz	03/2015	10/2012
15		Steering gear	Amerex	Foam AB	AC641032	27lb9oz	03/2015	03/2015
18		Control room	Amerex	Powder ABC	AV93464	16lb10oz	10/2011	10/2011
20		Bow Thruster	Amerex	Foam AB	AC641028	27lb9oz	03/2015	03/2015
21		Passageway (toilets)	Amerex	Foam AB	AC641007	27lb9oz	03/2015	03/2015
22		Main port side E/R	Amerex	CO2 BC	AB881104	33lb6oz	02/2016	02/2016
23		Main forward centre E/R	Amerex	Foam AB	AC790010	27lb9oz	03/2015	10/2012
24		Main starboard E/R	Amerex	Powder ABC	AW41395	33lb11oz	01/2013	09/2011
25		Main centre aft E/R	Amerex	CO2 BC	AC412736	25lb12oz	06/2013	06/2013
26		Main starboard E/R	Amerex	Foam AB	AC790022	27lb9oz	03/2015	10/2012
28		Aft auxiliary E/R	Amerex	Foam AB	AC641033	27lb9oz	03/2015	03/2015
29		Forward auxiliary E/R	Amerex	CO2 BC	AB881101	33lb6oz	02/2016	02/2016
30		Passageway (C/R)	Amerex	Foam AB	AC641015	27lb9oz	03/2015	03/2015
		Kaeble 1	Strike First	Powder ABC	BT918474	8lb3oz	12/2013	12/2013
		Kaeble 1	Pyrene	Powder ABC	K543915	8lb3oz	03/2015	01/2009
		Kaeble 2	Pyrene	Powder ABC	K543720	8lb3oz	02/2016	05/2010
		Kaeble 2	Pyrene	Powder ABC	AE107660	8lb3oz	02/2016	02/2016
		Zodiac 420	Orfeo	Powder 1kg	3916407		01-2010	01-2010

**Kb10.4.D Equipment supplied by owner**

**Kb10.4.D.1** Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

**Kb10.4.E TECHNICAL DESCRIPTION**

**Kb10.4.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.

**Kb10.4.E.2** An annual inspection of portable fire extinguishers must be performed. Fire extinguisher inspection and maintenance shall be entrusted to a qualified representative.

**Kb10.4.E.3** The Contractor must for a 3 year inspection of a foam fire extinguisher replace the foam

**Kb10.4.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.

**Kb10.4.F Obstructions**

**Kb10.4.F.1** The Contractor is responsible for identifying items causing an obstruction, temporarily removing and storing them, and then reinstalling them on the vessel.

**Kb10.4.F.2** Once maintenance is completed, the contractor returns all the fire extinguishers on board the vessel and puts them back in place following the Chief Engineer's instructions.

**Kb10.4.G Annual inspection**

**Kb10.4.G.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.

**Kb10.4.H Preventive maintenance/Maintenance**

**Kb10.4.H.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.

**Kb10.4.H.2** Water Fire Extinguisher, Type K, CO2: Every 5 years

**Kb10.4.I Hydrostatic Test**

**Kb10.4.I.1** This test involves confirming that the container is in good condition by subjecting it to a pressure determined by the manufacturer.

**Kb10.4.I.2** Powder fire extinguisher: Every 12 years.

**Kb10.4.I.3** Water Fire Extinguisher, Type K, CO2: Every 5 years

**Kb10.4.I.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.

**Kb10.4.J Proof of Performance**

**Kb10.4.J.1** Inspection

10.4.J.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.

**Kb10.4.J.2** Testing

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

**Kb10.4.J.3** Certification

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

**Kb10.4.K Deliverables**

**Kb10.4.K.1** Drawings/reports

10.4.K.1.1 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.

**KB10.5 FIRE DETECTION SYSTEM**

**Kb10.5.A SCOPE**

**Kb10.5.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.

**Kb10.5.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	

**Kb10.5.C Equipment supplied by owner**

**Kb10.5.C.1** Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

**Kb10.5.D TECHNICAL DESCRIPTION**

**KB10.5.D.1 General**

10.5.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.

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

10.5.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.

**Kb10.5.D.2** Location

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

**Kb10.5.D.3** Obstructions

10.5.D.3.1 The Contractor is responsible for identifying items causing an obstruction, temporarily removing and storing them, and then reinstalling them on the vessel.

Kb10.5.E **PROOF OF PERFORMANCE**

**Kb10.5.E.1** Inspection

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

**Kb10.5.E.2** Certification

10.5.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 Vessel Maintenance Manager.

Kb10.5.F **DELIVERABLES**

**Kb10.5.F.1** Drawings/reports

10.5.F.1.1 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.

**KB10.6 ANNUAL INSPECTION OF THE FIXED FIREFIGHTING SYSTEM**

**Kb10.6.A SCOPE**

**Kb10.6.A.1** The purpose of this specification is to perform maintenance on and certify the fixed fire suppression system.

**Kb10.6.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.

**Kb10.6.A.3** The fixed fire suppression system is an FM200.

**Kb10.6.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	No
Regulations		
	Canada Shipping Act, 2001	No

**Kb10.6.C Accreditation**

**Kb10.6.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.

**Kb10.6.D Equipment supplied by owner**

**KB10.6.D.1** Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications

**Kb10.6.E TECHNICAL DESCRIPTION**

**Kb10.6.E.1** General

10.6.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 shall attend all tests.

10.6.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 shall 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.

10.6.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.

10.6.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.

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

**10.6.E.1.6** 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.

**Kb10.6.E.2** Obstructions

10.6.E.2.1 The Contractor is responsible for identifying items causing an obstruction, temporarily removing and storing them, and then reinstalling them on the vessel.

Kb10.6.F **PROOF OF PERFORMANCE**

**Kb10.6.F.1** Inspection

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

**Kb10.6.F.2** Tests

10.6.F.2.1 The Chief Engineer must be present for the system inspection and test.

**Kb10.6.F.3** Certification

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

**Kb10.6.F.4** DELIVERABLES

10.6.F.4.1 Drawings/reports

10.6.F.4.2 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.

**KB10.7 ANNUAL INSPECTION OF THE LIFEBOAT DAVIT**

**Kb10.7.A Scope**

**Kb10.7.A.1** With this specification it is intended that the Contractor retains the services of a company accredited by Wellin Lambie to conduct the annual inspection and certification of the lifeboat davit and its lifting apparatus.

**Kb10.7.B RefeRENCES**

Document	Title	Included Yes/No
Plan		
Publications		
Maintenance and Operation Manual	Wellin Lambie Maintenance and Operation Manual	
Standards		
Regulations	Canada Shipping Act, 2001	

**Kb10.7.C Equipment supplied by owner**

**KB10.7.C.1** Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications

**Kb10.7.D Technical Description**

**Kb10.7.D.1** General

Supplier: Wellin Lambie LTD

Supplier ref: 7773/7

Davit type: PIV1.0A

Assy no: 5601-1701

SWI: 1080 KG

**Kb10.7.D.2** Annual maintenance in accordance with the manufacturer’s book for the period relating to the system’s age, the 48th month. In addition, it will be imperative to pay special attention and inspect the brake, which has been damaged due to corrosion on another MSPV.

**Kb10.7.D.3** The contractor retains the services of a company accredited by the manufacturer to conduct the annual inspection and certification of the davit and its integral lifting device.

10.7.D.3.1 Adjust limit switches

10.7.D.3.2 Conduct verification of the centrifugal brake

10.7.D.3.3 Adjust and verify the luff out cable levers

**Kb10.7.D.4** Location

10.7.D.4.1 The davit is located to starboard on the wheelhouse deck.

**Kb10.7.D.5** Obstructions

10.7.D.5.1 Il incombe à l'entrepreneur de repérer les articles faisant obstruction, de les enlever temporairement et de les entreposer, puis de les réinstaller sur le navire.

Kb10.7.E **Proof of Performance**

**Kb10.7.E.1** Inspection

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

**Kb10.7.E.2** Certification

10.7.E.2.1 The Contractor shall provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor shall also send an electronic copy of certificates to the person responsible for the vessel's maintenance.

Kb10.7.F **DELIVERABLES**

**Kb10.7.F.1** Drawings/reports

10.7.F.1.1 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.

## **KB11**    **Hull and Structure**

### **KB11.1**    **MULTI CABLE TRANSITS**

#### Kb11.1.A    **Scope**

**Kb11.1.A.1**    Some of the cable transits on the vessel are not watertight. A repair of these transit is necessary.

#### Kb11.1.B    **Référence**

Document	Title	Included Yes/No
Plan		
AF6094-32100-02	Cableway Keyplan	yes
Publications		
	Installation instruction NoFirno	yes
Standards		
MPO 5737	Fleet Safety Manual	
Regulations		
	Canada Shipping Act, 2001	
	Lloyd's special Service Craft 2016	

#### Kb11.1.C    **Technical Description**



Figure 1: obstruction multi cable transit in control room

- Kb11.1.C.1** The Contractor must seal the multi cable transit between the control room and the main machinery room.
- Kb11.1.C.2** The multi cable transit if made by Nofirno
- Kb11.1.C.3** The authorized distributor for Nofirno product is W&O Supply
- Kb11.1.C.4** The Contractor must remove the sleeves from the wire and the packing material frome ah of the transits needing work.
- Kb11.1.C.5** The Contractor must provide the material and labour to perform the repair..
- Kb11.1.C.6** The Contractor must perform the repair according to the manufacturer's recommendations.

**KB11.2      ADDITION OF A RAIL SYSTEM FOR THE WHEELHOUSE**

**Kb11.2.A    Scope**

**Kb11.2.A.1**    The purpose of the work is to install a flush mounted rail system on the deck to allow a better circulation in the wheelhouse by allowing the three chairs to move a distance of 24 inches.

**Kb11.2.B    Reference**

Document	Title	Included Yes/No
Plan		
AF6094-32100-02		
Publications		
Standards		
MPO 5737	Manuel de sécurité et de sûreté de la Flotte	
CSA W59.2	Welded Aluminum Construction	
Regulations		
	Canada Shipping Act, 2001	
	Lloyd's special Service Craft 2016	

**Kb11.2.C    Technical description**

**Kb11.2.C.1**    The deck is aluminium and is elevated a distance of 4 inches. That is the surface the rails will be welded on. That space is to allow cable runs for the wheelhouse.

**Kb11.2.C.2**    The Contractor must supply three rail systems.

**Kb11.2.C.3**    The Contractor must supply a rail system that is meant to be flush mounted. The Contractor must consider delivery time for the rail systems. Nor Sap or Cleeman style rail systems are the styles requested.

**Kb11.2.C.4**    The Contractor must install the flush mounted rail system and fabricate adaptor plates to allow installation of the current wheelhouse chairs.

**Kb11.2.C.5**    The Contractor must supply all necessary material for the modification of the 3 chairs. The rails must be flush with the deck and the 3 chairs must be able to move a distance of 24 inches.

**Kb11.2.C.6**    The chairs must be able to be locked in the desired position.

**Kb11.2.C.7**    Under the deck is the wheelhouse wiring. The Contractor must plan where the cut will be made to re-install the plate with the rail system.

Kb11.2.D **Proof of performance**

1.1.1 The Contractor must provide a quality assurance document regarding the welding. All welds must be visually inspected and appropriate measures must be taken.



Figure 2: Wheelhouse chair

**KB11.3 ADDITION OF A VENT FOR THE ROPE LOCKER**

**Kb11.3.A Scope**

**Kb11.3.A.1** The addition of forced air for the forward stbd rope locker on the main deck will allow better air flow and solve some moisture problems.

**Kb11.3.B Reference**

Document	Title	Included Yes/No
Plan		
Publications		
	MSPV international coatings Maintenance Plan	
	OBM	
Standards		
TP 127 F		non
CT-043-eq-eg-001	Canadian Coast Guard welding Standard	oui
CGSB 48.9712-2006	Non destructive testing qualification and certificaion of personnel	non
CSA Standard 178.2	Welding inspector certification	non
Regulations		
	Lloyd’s special Service Craft 2016	
	Canada Shipping Act, 2001	

**Kb11.3.C Equipment supplied by owner**

**Kb11.3.C.1** Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

**Kb11.3.D Technical Description**

**Kb11.3.D.1 General**

11.3.D.1.1 The Contractor must supply a vent on top of the rope locker compartment see figure 3.

11.3.D.1.2 The Contractor must fabricate an aluminium vent with a gooseneck. A fire damper must be installed for the natural intake.

- 11.3.D.1.3 The Contractor must fabricate and install an outlet for the force air in the bulkhead. This exhaust must have a fire damper. The Contractor must have the suction to take the air at the bottom of the compartment.
- 11.3.D.1.4 The Contractor must supply and install a fan with the following characteristics; 116m<sup>3</sup>/heure, 1 phase, 0.07W, 185 Pa.
- 11.3.D.1.5 The Contractor must plan for a method to fix the fire dampers in the open and close position.
- 11.3.D.1.6 The Contractor must apply a coating to all aluminum disturbed by the work. The coating must be applied according to the paint schedule.
- 11.3.D.1.7 The Contractor must supply and install a marine wire from the ventilation electrical panel. The wire must connect to the electrical distribution in the electronic equipment room.
- 11.3.D.1.8 The Contractor take into account the routing of the current wires and use the existing cable trays.
- 11.3.D.1.9 The Contractor must inform the chief engineer before opening or closing any wire transit in deckhead or bulkhead to pass new wires. Once the work is completed the Contractor must inform the chief engineer who will perform a final inspection to verify the integrity of the transit.

**Kb11.3.E Proof of Performance**

**Kb11.3.E.1 Tests**

- 11.3.E.1.1 Welds must be inspected by a welding inspector who is qualified according to the CSA W178.2. A welding inspection report must be given to the technical authority. L'entrepreneur doit fournir les preuves de qualification du soudeur qui fait le travail sur le navire.
- 11.3.E.1.2 A fire hose test must be performed to prove the integrity of the welds on the outside of the compartment.
- 11.3.E.1.3 The airtight of the fire damper must be proven with the fan working and no noticeable air leak.
- 11.3.E.1.4 L'entrepreneur doit démontrer le fonctionnement du ventilateur à l'autorité technique. The Contractor must prove to the chief engineer that the fan is in good working order.



A- Exterior Intake



B-Exterior outlet



C-Interior Intake



D- Interior outlet

Figure 3 Vent rope locker

**KB11.4    OPTIONAL ADDITION OF LIMBER HOLES IN MAIN ENGINE ROOM**

Kb11.4.A    **Scope**

**Kb11.4.A.1**    The Contractor is to perform all strip-out, fabrication and installation work required to meet the modifications to the Main Engine Room in accordance with the reference document from Allswater.

Kb11.4.B    **Reference**

**Kb11.4.B.1**    15069-800-SPC-001

Kb11.4.C    **Description technique**

**Kb11.4.C.1**    The Contractor must prove leak free running of all machinery that was disconnected for the work.

## **KB11.5 ADDITION OF A SPLASH GUARD FOR TRANSFORMER BANKS**

### **Kb11.5.A Scope**

**Kb11.5.A.1** The purpose for the shields is to provide IP44 or equivalent ingress protection and at the same time, not inhibit natural transformer cooling action. The Delta OEM was contacted and the requirement to avoid additional cooling and temperature monitoring was to ensure that there was at least a 6 inch clearance between the front and rear of the transformer and any shields being installed. This requirement was met and CCG has installed shields on the main switchboard, emergency switchboard and shore power transformers.

**Kb11.5.A.2** Due to weight issues 1/8" checker plate aluminum material was chosen for this application. The Contractor must note that the guidance drawings ask for 3/16" plate and Canada wants 1/8" material. It should be noted that the drawings being provided are to be used as a guide only. Based on experience gained during the shield installation onboard the McLaren and G Peddle there are minor differences that make it impossible to generate a "one size fits all" drawing. This discussion will start with the install in the AMR space and move forward from there.

**Kb11.5.A.3** I would suggest that the shields be removed at least once every two or three years for inspection and maintenance. The transformer bank most susceptible to copper corrosion would be the emergency generator installation as the bank is located directly in front of a major air intake vent.

### **Kb11.5.B Reference**

J16061-S01\_R0 Transformer Shields.dwg

J16061-S01\_R0 Transformer Shields sheet 1.pdf

J16061-S01\_R0 Transformer Shields sheet 2.pdf

J16061-S01\_R0 Transformer Shields sheet 3.pdf

J16061-S01\_R0 Transformer Shields sheet 4.pdf

### **Kb11.5.C Description technique**



This splash shield is shown in the upside down position. The bevel at the back is to be sloping down when finally installed. The shield was predrilled prior to installation and is intended to mitigate any water/oil in the bilge from splashing up under the transformers. The problem was first identified onboard the Peddle when a line broke and there was excessive amounts of bilge fluid splashing around as the vessel experienced minor rolling from minor wave action

The transformers must be raised slightly to enable the installation of the splash shield. Also, before the checker plate shields are installed the temporary hood style shields presently mounted on the transformer fronts must be removed to permit proper ventilation.



To raise the transformers slightly two end supports must be fabricated and a piece of square channel is used for the backbone. The pic to the left shows the aluminum support for the forward end. This support sets on the deck and several ratchet tie downs are used to strap the support to the upright stanchion shown in the pic.

This pic shows the aft support. As there is room at this end of the transformer installation the support straddles the transformer bed. the base of the support is a T and simply sets in place. The front end of the transformer bed does not have sufficient room to utilize the same support design.





Once the two end supports and strong back is in place you simply remove the transformer securing bolts and use wide ratchet straps to rise the transformers approx. ½ inch which will allow the splash shield to slip into place. Care must be take to raise and lower the transformers simultaneously so as not to damage the conduit connections between the transformers. Transformers must be powered down to complete this task.

11.5.C.1.1 This lifting approach works well in this tight area and can be utilized for both transformer banks in the AMR space.

**KB11.6    INSTALLATION OF A HEATED VENT ON THE POTABLE  
WATER TANK VENTS**

**Kb11.6.A    Scope**

**Kb11.6.A.1**    During winter, the vents for the potable water vents have a tendency to freeze. The installation of a heated vent is necessary to solve this problem.

Document	Title	Included
Plan		
Publications		
	Winteb wiko 5000 gooseneck type 1	yes
Standards		
TP 127E	Electrical standards for ships	no
Regulations		
	Lloyd’s special Service Craft 2016	
	Canada Shipping Act, 2001	

**Kb11.6.B    Equipment supplied by owner**

**Kb11.6.B.1**    Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

**Kb11.6.B.2**    Canada supplies 4 WIKO 5000 Gooseneck type 1 vents. (2 per ship).

**Kb11.6.C    Technical Description**

**Kb11.6.C.1**    The Contractor must run the wires to reach both heated vents.

**Kb11.6.C.2**    The Contractor must protect the wire where the wire is on the open deck.

**Kb11.6.C.3**    The Contractor must agree with the chief engineer as to where the power will be taken for the 2 150W vents.

**Kb11.6.C.4**    The compartment next to the potable water tank is the bow thruster room. Where the wire will be able to go up through the deck. There is currently no transit to go up on the deck.

**Kb11.6.C.5**    The Contractor must repair any insulated surface that is damaged during the work.



Figure 5: Port Aft corner of the bow thruster room



Figure 4: Distance between the end of the fresh water tank and the vent

#### Kb11.6.D **Proof of performance**

##### **Kb11.6.D.1** Inspection

11.6.D.1.1 The work must be to the satisfaction of the chief engineer

11.6.D.1.2 The Contractor must demonstrate that the vents are operational.

11.6.D.1.3 The Contractor must provide a report indicating any irregularities found.  
L'entrepreneur doit démontrer que les transits qui ont été ouverts sont étanches lorsque le travail est fini.

11.6.D.1.4 L'entrepreneur doit démontrer que la prise de courant est fonctionnelle.

#### Kb11.6.E **LIVRABLES**

##### **Kb11.6.E.1** Dessins/rapports

11.6.E.1.1 L'entrepreneur remettra au chef mécanicien une copie papier de son rapport tapé qui détaille les inspections, les modifications et les réparations apportées avant acceptation du présent élément. L'entrepreneur enverra également une copie électronique de tous les rapports et certificats au responsable de l'entretien du navire.

## **KB11.7**

## **KB12 Propulsion**

### **KB12.1 NOT USED**

## **KB13 Electrical Generation**

### **KB13.1 ANNUAL MAINTENANCE OF GENERATOR ALTERNATORS**

#### **Kb13.1.A**     **Scope**

**KB13.1.A.1**   Perform the annual maintenance of port, starboard and emergency generator alternators.

#### **Kb13.1.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  Canada Shipping Act, 2001	

#### **Kb13.1.C**     **Equipment supplied by owner**

**KB13.1.C.1**   Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

#### **Kb13.1.D**     **TECHNICAL DESCRIPTION**

**KB13.1.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.

13.1.D.1.3 For the purposes of the bid, please provide specialist electrician labour for a period of ten (10) hours to perform the work.

**Kb13.1.E      Obstructions**

**Kb13.1.E.1** The Contractor is responsible for identifying items causing an obstruction, temporarily removing and storing them, and then reinstalling them on the vessel.

**Kb13.1.F      PROOF OF PERFORMANCE**

**Kb13.1.F.1** Inspection

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

13.1.F.1.2 Provide a report indicating the values measured and irregularities observed.

**Kb13.1.F.2** DELIVERABLES

13.1.F.2.1 Drawings/reports

13.1.F.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 Vessel Maintenance Manager.

## **KB14 Electrical Distribution**

### **KB14.1 CHECK TIGHTNESS OF THE POWER SUPPLY PANEL CONNECTORS**

**Kb14.1.A Scope**

**Kb14.1.A.1** Conduct a check of tightness of all terminals and connectors in the main panel for main distribution and emergency distribution.

**Kb14.1.B RÉFÉRENCES**

Document	Title	Inclus
Plan		
Publications		
Standards		
TP 127 F	Normes d'électricité régissant les navires	non
Regulations	Lloyd's special Service Craft 2016 Canada Shipping Act, 2001	

**Kb14.1.C Equipment supplied by owner**

**Kb14.1.C.1** Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

**Kb14.1.D TECHNICAL DESCRIPTION**

**Kb14.1.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.

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)
- Many emergency panel
- 600 volt power supply
- 240 volt power supply
- 120 volt power supply

14.1.D.1.5 All power and control cables shall be checked.

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

14.1.D.1.7 For the purposes of the bid, please provide specialist electrician labour for a period of forty (40) hours to perform the work.

**Kb14.1.D.2** Obstructions

14.1.D.2.1 The Contractor is responsible for identifying items causing an obstruction, temporarily removing and storing them, and then reinstalling them on the vessel.

**Kb14.1.E** **PROOF OF PERFORMANCE**

**Kb14.1.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 a report indicating irregularities observed.

**Kb14.1.F** **DELIVERABLES**

**Kb14.1.F.1** Drawings/reports

14.1.F.1.1 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.

*Electrical Distribution*

**KB14.2 CHECKING THE INSULATION OF VARIOUS ELECTRICAL COMPONENTS (MEGGER TEST)**

Kb14.2.A **SCOPE**

**Kb14.2.A.1** Conduct insulation tests of various electrical components from the electrical generation (generator set) to the different components

Kb14.2.B **References**

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

Kb14.2.C **Equipment supplied by owner**

**Kb14.2.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.

Kb14.2.D **TECHNICAL DESCRIPTION**

**Kb14.2.D.1** General

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

- 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

**Kb14.2.D.2** For the purposes of the bid, please provide specialist electrician labour for a period of forty (40) hours to perform the work.

Kb14.2.E **Obstructions**

**Kb14.2.E.1** The Contractor is responsible for identifying items causing an obstruction, temporarily removing and storing them, and then reinstalling them on the vessel.

Kb14.2.F **PROOF OF PERFORMANCE**

**Kb14.2.F.1** Inspection

14.2.F.1.1 Work shall be completed to the satisfaction of the Chief Engineer.

14.2.F.1.2 Provide a report indicating irregularities observed and the values recorded.

Kb14.2.G **DELIVERABLES**

**Kb14.2.G.1** Drawings/reports

14.2.G.1.1 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.

**KB14.3**      **PUMP EMERGENCY POWER MODIFICATION**

**Kb14.3.A**      **Scope**

**Kb14.3.A.1**    Objective

**14.3.A.1.1**    The objective is to ensure the continuity of operation of stern tube bearing cooling and propeller pitch control in the case of black-out. Additionally, to ensure that both machinery rooms (AMR and MMR) maintain capability to pump the water out in case of possible water ingress.

**Kb14.3.A.2**    Background

14.3.A.2.1    Canadian Coast Guard (CCG) took acceptance of nine new Mid-Shore Patrol Vessels (MSPV) built by Irving Shipyards between 2012 and 2014 under “Lloyd’s Rules and Regulations for the Classification of Special Service Craft, 2009”.

**Kb14.3.B**      **Ships Particulars:**

Length Over All	42.8 m
Length at Water Line	39.9 m
Max Beam	7.0 m
Beam at Water Line	6.8 m
Fwd Draft	2.8 m
Aft Draft	2.8 m
Freeboard	1.7 m
Gross Tonnage	253.0 t
Cruising Range	2000 nm
Endurance	14 d
Cruising Speed	14.0 kts
Maximum Speed	25.0 kts

Class Notations

Hull Notation:                    +100A1 SSC PATROL, MONO, HSC, G4, EP.

Descriptive Notes:              ABBREVIATED NOTE GREEN PASSPORT

**Kb14.3.B.1**    Previously reported incidents revealed that while main engines operation is not affected by black-out condition, stern tube bearing cooling and propeller pitch control cannot be recovered even when Emergency Generator is connected. Additionally, both machinery rooms lose capability to pump the water out in case of possible water ingress. Although approved by LR Class, the present configuration impairs operational capabilities of the vessel and this modification is required as a risk mitigation factor.

**Kb14.3.B.2** Upon completion of this work the aforementioned critical systems should continue to support both the maneuvering and pumping capability from the emergency switchboard.

**Kb14.3.C** **Terminologie**

AMR	Auxiliary Machine Room		<b>Salle des machines auxiliaires</b>
BKR	Breaker		<b>Disjoncteur</b>
CPP	Controllable Pitch Propelle		<b>Hélice à pas variable</b>
ESB	Emergency Switch Board		<b>Tableau de distribution de secours</b>
LR	Lloyd's Register	LR	<b>LR – Lloyd's Register</b>
MMR	Main Machinery Room		<b>Salle des machines principales</b>
MSB	Main Switch Board	TDP	<b>TDP – Tableau de distribution principal</b>
P	Port	P	<b>P – Bâbord</b>
Stb	Stb Starboard		<b>Tribord</b>
SW	Sea Water		<b>Eau de mer</b>

**Kb14.3.D** **Documents de référence**

1. TP127E, Ships Electrical Standards: <a href="http://www.tc.gc.ca/eng/marinesafety/tp-tp127-menu-263.htm">http://www.tc.gc.ca/eng/marinesafety/tp-tp127-menu-263.htm</a>
2. Lloyd's Rules and Regulations for the Classification of Special Service Craft, 2009
3. LR Design Appraisal Document ATS-4413149-E-001-DAD
4. Single Line Diagram AF6094-32000-01, Sheet 2/10
5. Single Line Diagram AF6094-32000-01 Sheet 3/10
6. Techsol Switchboard Drawing SB00BB
7. Techsol Switchboard Drawing SB09BA
8. Techsol Switchboard Drawing SB09DA
9. Techsol Switchboard Drawing SBZZDC
10. Techsol Switchboard Drawing SBZZDD
11. Techsol Switchboard Drawing SB13AA
12. DIN rail mounted 3-pos switch.jpg

13. CPP press maint pump.jpg
14. Lamacoid size_1.jpg
15. Lamacoid size_2.jpg
16. Lamacoid size_3.jpg
17. Lamacoid size_4.jpg
18. Lamacoid for SW cool pump.jpg
19. Lamacoid for ESB breakers.jpg
20. Rolls Royce drawing RRM200007039_page 1
21. Rolls Royce drawing RRM200007039_page 2
22. Lamacoid for BKR 2Q03.jpg
23. Lamacoid for BKR 2Q13.jpg

**Kb14.3.E**      **Requirements**

**Kb14.3.E.1**    Scope of Work

14.3.E.1.1    The scope of work includes the following tasks:

**Kb14.3.E.2**    General requirements.

14.3.E.2.1    Modification of CPP STB Pressure Maintaining Pump (P104), 1.8 kW.

14.3.E.2.2    Modification of CPP PS Pressure maintaining Pump (P422), 1.8 kW.

14.3.E.2.3    Modification of SW Service Cooling Pump 2 (P404), 4.6 kW.

14.3.E.2.4    Modification of Bilge/Fire Pump MMR (P411), 6.4 kW.

14.3.E.2.5    To be noted that two CPP Pressure Maintaining Pumps must retain the existing feed from the MSB and additionally be provided with an alternative power feed from the ESB through a change-over selector switch. The SW Service Cooling Pump 2 and MMR Bilge/Fire Pump will have their power feeds moved from the MSB to ESB.

Kb14.3.F **Tasks**

**Kb14.3.F.1** General requirements:

- 14.3.F.1.1 The Contractor must make the appropriate wiring changes in accordance with the Class approved drawings listed in the Reference Documents.
- 14.3.F.1.2 All new cabling must meet Low Smoke (IEC61034-1&2)/Zero Halogen (IEC60754-1&2) requirements.
- 14.3.F.1.3 All new cabling must have a 600V/1kV voltage rating.
- 14.3.F.1.4 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 shall inform the Chief Engineer who will complete a final inspection to ensure the integrity of the transit.
- 14.3.F.1.5 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.
- 14.3.F.1.6 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.
- 14.3.F.1.7 The completed work must comply with the Rules and Regulations for the Classification of Special Service Craft, 2009 and the applicable parts of Ships Electrical Standards TP127E.
- 14.3.F.1.8 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.
- 14.3.F.1.9 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.
- 14.3.F.1.10 The Contractor must update any existing Lamacoids related to this project and also the addition of new Lamacoids to identify the configuration changes.
- 14.3.F.1.11 The Contractor must provide Lamacoids in two sets: one set is in English and the second set is in French language.

14.3.F.1.12 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.

14.3.F.1.13 The Contractor must not make any alterations to the drawings/specifications until the issue has been discussed with CCG.

**Kb14.3.F.2** Modification of CPP STB Pressure Maintaining Pump (P104), 1.8 kW:

14.3.F.2.1 Prior to commencement of any work the Contractor must request the Chief Engineer's assistance to change the valve configuration on the CPP system to permit operation of the pitch control from the local joy stick utilizing the Pressure Maintaining Pump. The Contractor must start the Pressure Maintaining Pump and document the direction of rotation.

14.3.F.2.2 The Contractor must isolate the power at the main switchboard, disconnect the supply and load sides of the old switch (Q1, see ref. docs #20, #21) located in the local control panel for the Pressure Maintaining Pump and remove the switch.

14.3.F.2.3 The Contractor must pull a new cable from breaker 2Q06 (ref. doc. #19 shows 2Q13 being used instead) located in the emergency switchboard back to the CPP controller located in the MMR.

14.3.F.2.4 The Contractor must mount the new 3 position switch as per the picture supplied by CCG (see reference document #12). Connect the feed from the main switchboard to position 1 on the new switch. Connect the new feed from the emergency switchboard to position 2 on the three position switch. Connect what used to be the load side conductors on the old switch to the common position on the new switch.

14.3.F.2.5 The Contractor must provide new Lamacoids to be permanently mounted on the controller front door. The first Lamacoid must have four lines: "DANGER" in capital letters at the top, "more than one power source" on the next line, "Main SWBD BKR 1Q04" on the next line, and "EMERGENCY SWBD BKR 2Q06" on the last line (see ref. doc. #13, 14, 15). The second Lamacoid must contain three lines starting from top to bottom "1 – MAIN SWBD, 0 – OFF, 2 – EMERGENCY SWBD" (see ref. doc #13, 16, 17). The Lamacoids must be white lettering on a red background.

14.3.F.2.7 The Contractor must update the Lamacoid at the emergency switchboard breaker 2Q06 to reflect the change in circuit description from “SPARE” to “CPP STB Press Maintaining PUMP”.

14.3.F.2.8 Upon completion of all work the Contractor, under the supervision of the Chief Engineer must start the system and complete a short trial to ensure proper rotation of the pump when fed from either the “Main” or Emergency” power sources.

**Kb14.3.F.3** Modification of CPP PS Pressure maintaining Pump (P422), 1.8 kW:

14.3.F.3.1 Prior to commencement of any work the Contractor must request the Chief Engineer’s assistance to change the valve configuration on the CPP system to permit operation of the pitch control from the local joy stick utilizing the Pressure Maintaining Pump. The Contractor must start the Pressure Maintaining Pump and document the direction of rotation.

14.3.F.3.2 The contractor must isolate the power at the main switchboard (4Q22), disconnect the supply and load sides of the old switch located in the local control panel for the Pressure Maintaining Pump and remove the switch.

14.3.F.3.3 The Contractor must pull a new cable from breaker 2Q08 located in the emergency switchboard back to the CPP controller located in the MMR.

14.3.F.3.4 The Contractor must mount the new 3 position switch as per the picture supplied by CCG (see ref. doc. #12). The Contractor must connect the feed from the main switchboard to position 1 on the new switch, connect the new feed from the emergency switchboard to position 2 on the three position switch and connect what used to be the load side conductors on the old switch to the common position on the new switch.

14.3.F.3.5 The Contractor must provide two new Lamacoids to be permanently mounted on the controller front door. The first Lamacoid must have four lines: “DANGER” in capital letters at the top, “more than one power source” on the next line, “Main SWBD BKR 4Q22” on the next line, and “EMERGENCY SWBD BKR 2Q08” on the last line (see ref. doc. #13, 14, 15). The second Lamacoid must contain three lines starting from top to bottom “1 – MAIN SWBD, 0 – OFF, 2 – EMERGENCY SWBD” (see ref. doc #13, 16, 17). The Lamacoids must be white lettering on a red background.

14.3.F.3.6 The contractor must update the Lamacoid at the emergency switchboard breaker 2Q08 to reflect the change in circuit description from “SPARE” to “CPP PS Press Maintaining Pump”.

14.3.F.3.7 Upon completion of all work the Contractor, under the supervision of the Chief Engineer must start the system and complete a short trial to ensure proper rotation of the pump when fed from either the “Main” or “Emergency” power sources.

**Kb14.3.F.4** Modification of SW Service Cooling Pump 2 (P404), 4.6 kW:

- 14.3.F.4.1 Prior to commencement of any work on the pump controller the Contractor must start the pump and document the direction of rotation.
- 14.3.F.4.2 In the main switchboard MCC section, the Contractor must locate and disconnect the feed cable for the Sea Water Cooling Pump #2 bucket (P404), tape the ends of the conductors and secure the cable behind the MCC with tie wraps so that the cable will not become an electrical or mechanical hazard. The Contractor must attach a tag to the leads which will identify where the cable was previously terminated and also identify it as a spare.
- 14.3.F.4.3 The Contractor must pull in a new cable from 2Q03 in the emergency switchboard to the 4Q04 location in the main switchboard. The Contractor must request the Chief Engineer to identify the cable routing and penetrations to be utilized for the cable run.
- 14.3.F.4.4 The Contractor must confirm correct rotation of the pump once all installation work is completed on this system.
- 14.3.F.4.5 The Contractor must fabricate a new Lamacoid to be permanently mounted on the Port MCC Unit 2-B SW Service Cooling Pump 2 (see ref. doc. #18) which must indicate “ FEED EMERGENCY SWBD DIST – 600V BKR 2Q03” (see ref. doc. #22). The Lamacoid shall be white lettering on a red background.
- 14.3.F.4.6 The Contractor must update the Lamacoid at the emergency switchboard breaker 2Q03 to reflect the change in circuit description from “SPARE” to “CPP STB Press Maintaining Pump.
- 14.3.F.4.7 Upon completion of all work the Contractor, under the supervision of the Chief Engineer must start the system and complete a short trial to ensure proper rotation of the pump.

**Kb14.3.F.5** Modification of Bilge/Fire Pump MMR (P411), 6.4 kW:

14.3.F.5.1 Prior to commencement of any work on the Bilge/Fire Pump controller the Contractor must start the pump and document the direction of rotation.

14.3.F.5.2 In the main switchboard MCC-PORT Unit 2-D, the Contractor must locate and disconnect the feed cable for the Bilge/Fire Pump MMR (1/2), tape the ends of the conductors and secure the cable behind the MCC with tie wraps so that the cable will not become an electrical or mechanical hazard. The Contractor must attach a tag to the leads which will identify where the cable was previously terminated and also identify it as a spare.

14.3.F.5.3 The Contractor must pull in a new cable from 2Q13 in the emergency switchboard to the 4Q11 location in the main switchboard/PORT. The Contractor must request the Chief Engineer to identify the cable routing and penetrations to be utilized for the cable run.

**Kb14.3.F.6** The Contractor must confirm correct rotation of the pump once all installation work is completed on this system.

14.3.F.6.1 The Contractor must fabricate a new Lamacoid to be permanently mounted on the Port MCC Unit 2-D Bilge/Fire Pump MMR (1/2) which must indicate "FEED EMERGENCY SWBD DIST – 600V BKR 2Q13" (see ref. doc. #23). The Lamacoid must be white lettering on a red background.

14.3.F.6.2 The Contractor must update the Lamacoid at the emergency switchboard breaker 2Q13 to reflect the change in circuit description from "SPARE" to "Bilge/Fire Pump MMR".

14.3.F.6.3 Upon completion of all work the Contractor, under the supervision of the Chief Engineer must start the system and complete a short trial to ensure proper rotation of the pump.

Kb14.3.G **Constraints**

- 14.3.G.1.1 Restricted access to vessels. Vessels are on program and may only be available depending on operations. Vessel visits will take coordination between the Contractor and Project Officer;
- 14.3.G.1.2 Availability of CCG personnel;
- 14.3.G.1.3 No access to CCG network;
- 14.3.G.1.4 CCG will not supply any referenced Standards or Classification Societies documentation.

Kb14.3.H Owner Supplied Equipment

- 14.3.H.1.1 **CCG will supply the 3 position changeover switch assembly to replace the Q1 switch in Rolls Royce drawing RRM200007039 (see ref. docs #20, 21). Position 1 must be connected to the main switchboard feed; position 2 must be connected to the Emergency Switchboard feed (Port-E208 / STB-E206); the ZERO Position must be the off position. The common output must be connected to the feed for the Service Pump controller as per Rolls Royce drawing RRM200007039 (see ref. docs #20, 21). The part numbers for the replacement switch are as follows:**

**194L-A25-350-3 three pole changeover switch 25 amp**

**194L-HE4A-350 Actuator C/W Escut/Knob**

# **KB18**    **COMMUNICATION AND NAVIGATION** **SYSTEMS**

## **KB18.1**    **INSPECTION OF THE VESSEL'S RADIO**

**Kb18.1.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.

**Kb18.1.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*.

**Kb18.1.A.3**    The radio checklist is to be given to the crew and an electronic copy sent to the technical authority.

**Kb18.1.A.4**    The Contractor shall provide proof that Lloyd Register has authorized the Contractor to do the work.

### **Kb18.1.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	
Reciever for global navigation satellite systems and terrestrial radionavigation systems	GPS SAAB R4	SAAB	
AIS	AIS R4	SAAB	

N.G.C.C. A. LEBLANC (A 028)

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## **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. Supply round-trip transportation.

#### **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.C Boat description :**

Ribo 420 :
Serial no. : FRXBC210FB212      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.

### **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.

**Kb18.1.B.1** Each hose must have a stainless steel plate indicating the test date, working pressure, test pressure, hose serial number, and Contractor's name.

**KB18.1.B.2** The Contractor must provide the Chief Engineer with a certificate for each hose and a copy to the technical authority

### **LB10.3 INSPECTION OF ZODIAC LIFTING HOOK**

**Lb10.3.A.1** The Contractor must have a representative approved by transport Canada to conduct an annual certification of the release hooks on the Zodiacs. The crew will dismantle the hooks.

**Lb10.3.A.2** The Contractor must supply proof that the representative is approved to do the work by Transport Canada.

**Lb10.3.A.3** Here is the list of hooks to be inspected:

10.3.A.3.1 2 FAST RSQ lifting hook serial number : #0062

10.3.A.3.2 One NEM hook serial number: 5786.

**Lb10.3.A.4** The Contractor must provide an inspection certificate and an inspection report for each hook. The vessel must receive these and a copy must be given to the technical authority.

### **LB10.4 PORTABLE FIRE EXTINGUISHERS INSPECTION**

#### **Lb10.4.A Scope**

**Lb10.4.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.

#### **Lb10.4.B References**

**Lb10.4.B.1** Reference drawings/data plate information

10.4.B.1.1 NFPA10 Standard for Portable Fire Extinguisher

#### **Lb10.4.C List of types of vessel fire extinguishers to be inspected**

	<b>Navigation bridge</b>
	<b>Main deck</b>
	<b>Lower deck</b>
	<b>Boating equipment</b>
	<b>Supplementary</b>

No. station	Année de fabrication	Emplacement	Marque & Modèle	Type	No. Série	Poids min (kg)	Dernière maintenance de 3/5/6 ans	Dernier test hydrostatique 5/12 ans
1	2012	RCMP room	Amerex B456	Poudre ABC	BG-284191	7.54	01-2012	01-2012
3	2013	RCMP room	Amerex 311	CO2	AC-415119	15.1	01-2013	01-2013
4	2013	Wheelhouse	Amerex B456	Poudre ABC	BU-121417	7.54	01-2013	01-2013
N/A	2013	Starboard battery compartment	Amerex B260	Mousse AK Sticker!!!	AD-369268	9.22	01-2013	01-2013
N/A	2012	Port side battery compartment	Amerex 252	Mousse AB	AC-790008	12.5	01-2012	01-2012
6	2013	Food shop in passageway	Amerex 252	Mousse AB	AD-568099	12.5	01-2013	01-2013
8	2013	Galley	Amerex	Classe AK B260	AD-369273	9.22	01-2013	01-2013
9	2013	Passageway commanding officer, chief engineer	Amerex 252	Mousse AB Sticker!!	AD-568094	12.5	01-2013	01-2013
12	2013	Elec. equip. room	Amerex 331	CO2 BC	AC-415118	15.1	01-2013	01-2013
13	2013	Emergency	Amerex	CO2 BC	AC-415111	15.1	01-2013	01-2013

		generator	331					
14	2011	Emergency generator	Amerex B456	Poudre ABC	AT-437639	7.54	01-2011	01-2011
31	2013	Exterior starboard	Amerex B456	Poudre ABC	BU-122131	7.54	01-2013	01-2013
15	2013	Steering gear	Amerex 252	Mousse AB	AD-568085	12.5	01-2013	01-2013
18	2013	Control room	Amerex B456	Poudre ABC	BU-122134	7.54	01-2013	01-2013
20	2013	Bow Thruster	Amerex 252	Mousse AB	AD-568090	12.5	01-2013	01-2013
21	2013	Passageway (toilets)	Amerex 252	Mousse AB	AD-568087	12.5	01-2013	01-2013
22	2013	Main port side E/R	Amerex 331	CO2 BC	AC-415001	15.8	01-2013	01-2013
23	2013	Main forward centre E/R	Amerex 252	Mousse AB	AD-568092	12.5	01-2013	01-2013
24	2013	Main centre aft E/R	Amerex A411	Poudre ABC	BT-764696	14.94	01-2013	01-2013
25	2013	Main starboard E/R	Amerex 331	CO2 BC	AC-415120	15.8	01-2013	01-2013
26	2013	Aft auxiliary E/R	Amerex 252	Mousse AB	AD-568086	12.5	01-2013	01-2013
28	2013	Forward auxiliary E/R	Amerex 252	Mousse AB	AD-568084	12.5	01-2013	01-2013
29	2013	Passageway (C/R)	Amerex 331	CO2 BC	AC-415109	15.8	01-2013	01-2013
30	2013	Main centre aft E/R	Amerex 252	Mousse AB	AD-568097	12.5	01-2013	01-2013
	2010	Embarcation	Pyrene	Poudre ABC	AE-107727	3.72	01-2010	01-2010
	2010	Embarcation	Pyrene	Poudre ABC	AE-107732	3.72	01-2010	01-2010
	2011	Zodiac Solas	Orfeo	Poudre ABC	75894.001	1	09-2011	09-2011

					18334			
2013	Immersion suits	Amerex B456	Poudre ABC	BU-121547	7.54	01-2013	01-2013	
2013	Immersion suits	Amerex A411	Poudre ABC	BT-764697	14.94	01-2013	01-2013	
2013	Immersion suits	Amerex 331	CO2 BC	AC-415121	15.8	01-2013	01-2013	

**Lb10.4.D Equipment supplied by owner**

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

**Lb10.4.E TECHNICAL DESCRIPTION**

**Lb10.4.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.

**Lb10.4.E.2** An annual inspection of portable fire extinguishers must be performed. Fire extinguisher inspection and maintenance shall be entrusted to a qualified representative.

**Lb10.4.E.3** The Contractor must for a 3 year inspection of a foam fire extinguisher replace the foam

**Lb10.4.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.

**Lb10.4.F Obstructions**

**Lb10.4.F.1** The Contractor is responsible for identifying items causing an obstruction, temporarily removing and storing them, and then reinstalling them on the vessel.

**Lb10.4.F.2** Once maintenance is completed, the contractor returns all the fire extinguishers on board the vessel and puts them back in place following the Chief Engineer's instructions.

**Lb10.4.G**

**Lb10.4.G.1 Annual inspection**

**Lb10.4.G.2** 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.

**Lb10.4.H Preventive maintenance/Maintenance**

**Lb10.4.H.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.

**Lb10.4.H.2** Water Fire Extinguisher, Type K, CO2: Every 5 years

**Lb10.4.I Hydrostatic Test**

**Lb10.4.I.1** This test involves confirming that the container is in good condition by subjecting it to a pressure determined by the manufacturer.

**Lb10.4.I.2** Powder fire extinguisher : Every 12 years.

**Lb10.4.I.3** Water Fire Extinguisher, Type K, CO2: Every 5 years

**Lb10.4.I.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.

**Lb10.4.J Proof of Performance**

**Lb10.4.J.1 Inspection**

10.4.J.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.

**Lb10.4.J.2 Testing**

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

**Lb10.4.J.3 Certification**

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

**Lb10.4.J.4 Deliverables**

10.4.J.4.1 Drawings/reports

10.4.J.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.

**LB10.5 FIRE DETECTION SYSTEM**

**Lb10.5.A SCOPE**

**Lb10.5.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.

**Lb10.5.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	

**Lb10.5.C Equipment supplied by owner**

**Lb10.5.C.1** Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

**Lb10.5.D TECHNICAL DESCRIPTION**

**LB10.5.D.1** General

10.5.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.

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

10.5.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.

**Lb10.5.D.2** Location

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

**Lb10.5.D.3 Obstructions**

10.5.D.3.1 The Contractor is responsible for identifying items causing an obstruction, temporarily removing and storing them, and then reinstalling them on the vessel.

Lb10.5.E **PROOF OF PERFORMANCE**

**Lb10.5.E.1 Inspection**

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

**Lb10.5.E.2 Certification**

10.5.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 Vessel Maintenance Manager.

**Lb10.5.E.3 DELIVERABLES**

10.5.E.3.1 Drawings/reports

10.5.E.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 shall also send an electronic copy of all the reports and certificates to the Vessel Maintenance Manager.

**LB10.6 ANNUAL INSPECTION OF THE FIXED FIREFIGHTING SYSTEM**

**Lb10.6.A SCOPE**

**Lb10.6.A.1** The purpose of this specification is to perform maintenance on and certify the fixed fire suppression system.

**Lb10.6.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.

**Lb10.6.A.3** The fixed fire suppression system is an FM200.

**Lb10.6.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	

**Lb10.6.C Accreditation**

**Lb10.6.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.

**Lb10.6.D Equipment supplied by owner**

**LB10.6.D.1** Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications

**Lb10.6.E TECHNICAL DESCRIPTION**

**Lb10.6.E.1** General

10.6.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 shall attend all tests.

10.6.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 shall 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.

10.6.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.

10.6.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.

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

**Lb10.6.E.2 Obstructions**

10.6.E.2.1 The Contractor is responsible for identifying items causing an obstruction, temporarily removing and storing them, and then reinstalling them on the vessel.

Lb10.6.F **PROOF OF PERFORMANCE**

**Lb10.6.F.1** Inspection

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

**Lb10.6.F.2** Tests

10.6.F.2.1 The Chief Engineer must be present for the system inspection and test.

Lb10.6.G **Certification**

**Lb10.6.G.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.

**Lb10.6.G.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.

10.6.G.2.1 DELIVERABLES

1.1.2 Drawings/reports

***1.1.2.1 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.***

**LB10.7 ANNUAL INSPECTION OF THE LIFEBOAT DAVIT**

**Lb10.7.A Scope**

**Lb10.7.A.1** With this specification it is intended that the Contractor retains the services of a company accredited by Wellin Lambie to conduct the annual inspection and certification of the lifeboat davit and its lifting apparatus.

**Lb10.7.B RefeRENCES**

Document	Title	Included Yes/No
Plan		
Publications		
Maintenance and Operation Manual	Wellin Lambie Maintenance and Operation Manual	
Standards		
Regulations	Canada Shipping Act, 2001	

**Lb10.7.C Equipment supplied by owner**

**LB10.7.C.1** Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications

**Lb10.7.D Technical Description**

**Lb10.7.D.1** General

Supplier: Wellin Lambie LTD

Supplier ref: 7773/7

Davit type: PIV1.0A

Assy no: 5601-1701

SWI: 1080 KG

**Lb10.7.D.2** Annual maintenance in accordance with the manufacturer’s book for the period relating to the system’s age, the 48th month. In addition, it will be imperative to pay special attention and inspect the brake, which has been damaged due to corrosion on another MSPV.

**Lb10.7.D.3** The contractor retains the services of a company accredited by the manufacturer to conduct the annual inspection and certification of the davit and its integral lifting device.

10.7.D.3.1 Adjust limit switches

10.7.D.3.2 Conduct verification of the centrifugal brake

10.7.D.3.3 Adjust and verify the luff out cable levers

**Lb10.7.D.4** Location

10.7.D.4.1 The davit is located to starboard on the wheelhouse deck.

**Lb10.7.D.5** Obstructions

10.7.D.5.1 Il incombe à l'entrepreneur de repérer les articles faisant obstruction, de les enlever temporairement et de les entreposer, puis de les réinstaller sur le navire.

Lb10.7.E **Proof of Performance**

**Lb10.7.E.1** Inspection

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

**Lb10.7.E.2** Certification

10.7.E.2.1 The Contractor shall provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor shall also send an electronic copy of certificates to the person responsible for the vessel's maintenance.

**Lb10.7.E.3** DELIVERABLES

10.7.E.3.1 Drawings/reports

10.7.E.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 shall also send an electronic copy of the report to the person responsible for the vessel's maintenance.

## **LB11**    **Hull and Structure**

### **LB11.1**    **MULTI CABLE TRANSITS**

Lb11.1.A    **Scope**

**Lb11.1.A.1** Some of the cable transits on the vessel are not watertight. A repair of these transit is necessary.

Lb11.1.B    **Référence**

Document	Title	Included Yes/No
Plan		
AF6094-32100-02	Cableway Keyplan	yes
Publications		
	Installation instruction NoFirno	yes
Standards		
MPO 5737	Fleet Safety Manual	
Regulations		
	Canada Shipping Act, 2001	
	Lloyd’s special Service Craft 2016	

Lb11.1.C    **Technical Description**



Figure 6: obstruction multi cable transit in control room

**Lb11.1.C.1** The Contractor must seal the multi cable transit between the control room and the main machinery room.

**Lb11.1.C.2** The multi cable transit if made by Nofirno

**Lb11.1.C.3** The authorized distributor for Nofirno product is W&O Supply

**Lb11.1.C.4** The Contractor must remove the sleeves from the wire and the packing material from ah of the transits needing work.

**Lb11.1.C.5** The Contractor must provide the material and labour to perform the repair..

**Lb11.1.C.6** The Contractor must perform the repair according to the manufacturer's recommendations.

**LB11.2      OPTIONAL ADDITION OF A RAIL SYSTEM FOR THE  
WHEELHOUSE**

Lb11.2.A      **Scope**

**Lb11.2.A.1** The purpose of the work is to install a flush mounted rail system on the deck to allow a better circulation in the wheelhouse by allowing the three chairs to move a distance of 24 inches.

Lb11.2.B      **Reference**

Document	Title	Included Yes/No
Plan		
AF6094-32100-02		
Publications		
Standards		
MPO 5737	Manuel de sécurité et de sûreté de la Flotte	
CSA W59.2	Welded Aluminum Construction	
Regulations		
	Canada Shipping Act, 2001	
	Lloyd's special Service Craft 2016	

Lb11.2.C      **Technical description**

**Lb11.2.C.1** The deck is aluminium and is elevated a distance of 4 inches. That is the surface the rails will be welded on. That space is to allow cable runs for the wheelhouse.

**Lb11.2.C.2** The Contractor must supply three rail systems.

**Lb11.2.C.3** The Contractor must supply a rail system that is meant to be flush mounted. The Contractor must consider delivery time for the rail systems. Nor Sap or Cleeman style rail systems are the styles requested.

**Lb11.2.C.4** The Contractor must install the flush mounted rail system and fabricate adaptor plates to allow installation of the current wheelhouse chairs.

**Lb11.2.C.5** The Contractor must supply all necessary material for the modification of the 3 chairs. The rails must be flush with the deck and the 3 chairs must be able to move a distance of 24 inches.

**Lb11.2.C.6** The chairs must be able be locked in the desired position.

**Lb11.2.C.7** Under the deck is the wheelhouse wiring. The Contractor must plan where the cut will be made to re-install the plate with the rail system.

**Lb11.2.D** **Proof of performance**

**Lb11.2.D.1** The Contractor must provide a quality assurance document regarding the welding. All welds must be visually inspected and appropriate measures must be taken.



Figure 7: Wheelhouse chair

**LB11.3** **COMMAND CENTER MODIFICATION**

**Lb11.3.A** **Scope**

**Lb11.3.A.1** The command center is not optimised for the joint use of fisheries officers and navigation personnel.

**Lb11.3.B** **Equipment supplied by owner**

**Lb11.3.B.1** Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

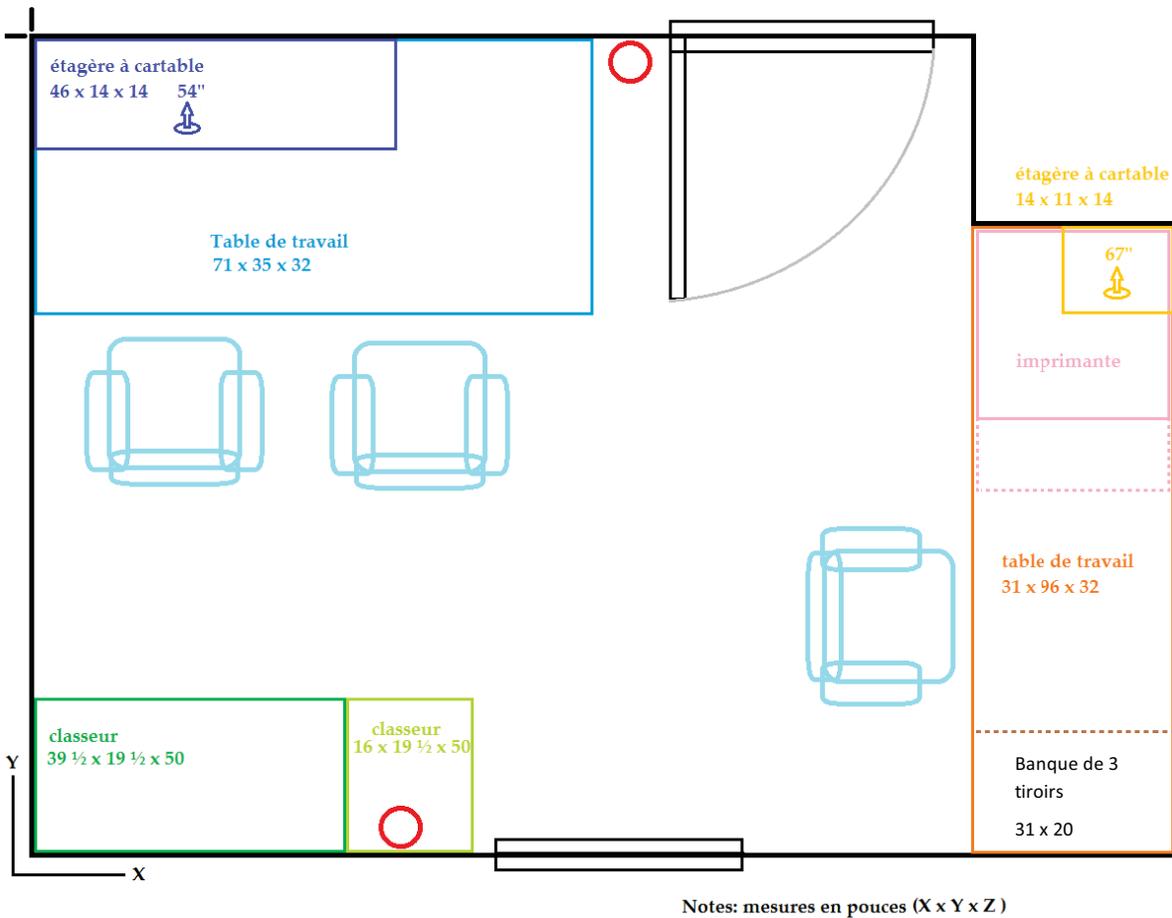


Figure 8: Configuration of the command center

Lb11.3.C **Technical Description**

**Lb11.3.C.1** The Contractor supply and install a table to go against the forward bulkhead of the command center and be of a similar size to the existing table. The table must be of a height to work sitting down.

**Lb11.3.C.2** The Contractor must create a passage in the table to allow for the radar cable that run on the forward bulkhead of the command center.

**Lb11.3.C.3** The Contractor is not providing the chairs described on the schematic. The Contractor is not providing the printer, but must adapt the desk to allow the printer securing.

**Lb11.3.C.4** The Contractor must supply a new work surface on the starboard side of the room with a 3 drawer bank aft of the room.

**Lb11.3.C.5** The Contractor must secure all furniture in the room for use at sea. Including locks on all filing cabinet.

**Lb11.3.C.6** The Contractor must supply and install a shelf for binders. There must be a securing arrangement for use at sea.

Lb11.3.D **Proof of performance**

**Lb11.3.D.1** The Contractor must show the chief engineer the securing arrangement of all furniture in the room.

**LB11.4**      **ADDITION OF A VENT FOR THE ROPE LOCKER**

Lb11.4.A      **Scope**

**Lb11.4.A.1** The addition of forced air for the forward stbd rope locker on the main deck will allow better air flow and solve some moisture problems.

Lb11.4.B      **Reference**

Document	Title	Included Yes/No
Plan		
Publications		
	MSPV International Coatings Maintenance PlanOBM docx REV 1	
Standards		
TP 127 F		non
CT-043-eq-eg-001	Canadian Coast Guard welding Standard	oui
CGSB 48.9712-2006	Non destructive testing qualification and certificaion of personnel	non
CSA Standard 178.2	Welding inspector certification	non
Regulations		
	Lloyd’s special Service Craft 2016	
	Canada Shipping Act, 2001	

Lb11.4.C      **Equipment supplied by owner**

**Lb11.4.C.1** Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

Lb11.4.D      **Technical Description**

**Lb11.4.D.1** General

11.4.D.1.1 The Contractor must supply a vent on top of the rope locker compartment see figure 3.

11.4.D.1.2 The Contractor must fabricate an aluminium vent with a gooseneck. A fire damper must be installed for the natural intake.

- 11.4.D.1.3 The Contractor must fabricate and install an outlet for the force air in the bulkhead. This exhaust must have a fire damper. The Contractor must have the suction to take the air at the bottom of the compartment.
- 11.4.D.1.4 The Contractor must supply and install a fan with the following characteristics; 116m<sup>3</sup>/hour, 1 phase, 0.07W, 185 Pa.
- 11.4.D.1.5 The Contractor must plan for a method to fix the fire dampers in the open and close position.
- 11.4.D.1.6 The Contractor must apply a coating to all aluminum disturbed by the work. The coating must be applied according to the paint schedule.
- 11.4.D.1.7 The Contractor must supply and install a marine wire from the ventilation electrical panel. The wire must connect to the electrical distribution in the electronic equipment room.
- 11.4.D.1.8 The Contractor take into account the routing of the current wires and use the existing cable trays.
- 11.4.D.1.9 The Contractor must inform the chief engineer before opening or closing any wire transit in deckhead or bulkhead to pass new wires. Once the work is completed the Contractor must inform the chief engineer who will perform a final inspection to verify the integrity of the transit.

Lb11.4.E **Proof of Performance**

**Lb11.4.E.1** Tests

- 11.4.E.1.1 Welds must be inspected by a welding inspector who is qualified according to the CSA W178.2. A welding inspection report must be given to the technical authority. L'entrepreneur doit fournir les preuves de qualification du soudeur qui fait le travail sur le navire.
- 11.4.E.1.2 A fire hose test must be performed to prove the integrity of the welds on the outside of the compartment.
- 11.4.E.1.3 The airtight of the fire damper must be proven with the fan working and no noticeable air leak.
- 11.4.E.1.4 L'entrepreneur doit démontrer le fonctionnement du ventilateur à l'autorité technique. The Contractor must prove to the chief engineer that the fan is in good working order.



A- Exterior Intake



B-Exterior outlet



C-Interior Intake



D- Interior outlet

Figure 9 Vent rope locker

**LB11.5      GENERAL WELDING REPAIRS A.LEBLANC**

Lb11.5.A    **Scope**

**LB11.5.A.1** With this specification it is intended that the contractor retains the services of an accredited company to perform aluminum and steel repair welding to the vessel’s exterior

Lb11.5.B    **RÉFÉRENCES**

Document	Title	Included Yes/No
Plan		
Publications		
Standards		
W47.1	Certification of Companies for fusion welding of steel	
W47.2	Certification of Companies for fusion welding of aluminum	
	Canadian Coast Guard Welding standard	yes
Regulations		
	Lloyd’s special Service Craft 2016	
	Canada Shipping Act, 2001	

**Lb11.5.B.1** Equipment supplied by owner

11.5.B.1.1 Unless otherwise indicated, the contractor shall supply all material, equipment and parts necessary for performing the work of the quotation.

Lb11.5.C    **Technical Description**

**Lb11.5.C.1** General

11.5.C.1.1 The Contractor must note that the majority of the work is on aluminum structure.

Lb11.5.D **The Contractor must straighten the flag mast forward of the main deck.**



Figure 10: forward flag mast

Lb11.5.E **The Contractor must straighten the starboard post next to the jettisonable gasoline tank.**



Figure 11: Stbd post next to jettisonable gas tank

Lb11.5.F **The Contractor must change and strengthen the control post next to the windlass.**



Figure 12: Windlass and post to straighten and strengthen Figure 13: Second angle

**Lb11.5.G The Contractor must strengthen the aft aluminum stair.**



Figure 14: Port Aluminum stairs

**Lb11.5.H The Contractor must straighten the gangway post holders on the Port side.**



Figure 15: Gangway



Figure 16: Gangway to strengthen

**Lb11.5.I Fabricate grids covers for open deck hatches**

**Lb11.5.I.1** The Contractor must fabricate 4 aluminum grid covers that will cover open deck mounted hatches when open to keep someone from falling. The locations will be

11.5.I.1.1 Forepeak

11.5.I.1.2 Chain locker

11.5.I.1.3 Main Machinery Room

11.5.I.1.4 Auxiliary Machine Room

**Lb11.5.I.2** The Grids will be placed in the hatch frame

**Lb11.5.I.3** The grids must be able to support at least 300lbs.

**Lb11.5.J** **Obstructions**

**Lb11.5.J.1** The Contractor is responsible for identifying items causing an obstruction, temporarily removing and storing them, and then reinstalling them on the vessel.

**Lb11.5.J.2** The Contractor must note that the jettisonable gasoline tank cannot be move when filled. The tank cannot remain in place when welding is taking place. The tank must be kept in an upright position when not in place on the vessel and it must be kept protected.

**Lb11.5.K** **Proof of Performance**

**Lb11.5.K.1** Inspection

11.5.K.1.1 All work shall be completed to the satisfaction of the Chief Engineer.

**Lb11.5.K.2** LIVRABLES

11.5.K.2.1 Dessins/rapport

**11.5.K.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.

**LB11.6** **OPTIONAL ADDITION OF LIMBER HOLES IN MAIN ENGINE ROOM**

**Lb11.6.A** **Scope**

The Contractor is to perform all strip-out, fabrication and installation work required to meet the

**Lb11.6.A.1** modifications to the Main Engine Room in accordance with the reference document from Allswater.

**Lb11.6.B** **References**

**Lb11.6.B.1** 15069-800-SPC-001

**Lb11.6.C** **Description technique**

**Lb11.6.C.1** The Contractor must prove leak free running of all machinery that was disconnected for the work.

## **LB11.7     ADDITION OF A SPLASH GUARD FOR TRANSFORMER BANKS**

### **Lb11.7.A     Scope**

**Lb11.7.A.1** The purpose for the shields is to provide IP44 or equivalent ingress protection and at the same time, not inhibit natural transformer cooling action. The Delta OEM was contacted and the requirement to avoid additional cooling and temperature monitoring was to ensure that there was at least a 6 inch clearance between the front and rear of the transformer and any shields being installed. This requirement was met and CCG has installed shields on the main switchboard, emergency switchboard and shore power transformers.

**Lb11.7.A.2** Due to weight issues 1/8" checker plate aluminum material was chosen for this application. The Contractor must note that the guidance drawings ask for 3/16" plate and Canada wants 1/8" material. It should be noted that the drawings being provided are to be used as a guide only. Based on experience gained during the shield installation onboard the McLaren and G Peddle there are minor differences that make it impossible to generate a "one size fits all" drawing. This discussion will start with the install in the AMR space and move forward from there.

**Lb11.7.A.3** I would suggest that the shields be removed at least once every two or three years for inspection and maintenance. The transformer bank most susceptible to copper corrosion would be the emergency generator installation as the bank is located directly in front of a major air intake vent.

### **Lb11.7.B     Reference**

J16061-S01\_R0 Transformer Shields.dwg

J16061-S01\_R0 Transformer Shields sheet 1.pdf

J16061-S01\_R0 Transformer Shields sheet 2.pdf

J16061-S01\_R0 Transformer Shields sheet 3.pdf

J16061-S01\_R0 Transformer Shields sheet 4.pdf

Lb11.7.C **Description technique**



This splash shield is shown in the upside down position. The bevel at the back is to be sloping down when finally installed. The shield was predrilled prior to installation and is intended to mitigate any water/oil in the bilge from splashing up under the transformers. The problem was first identified onboard the Peddle when a line broke and there was excessive amounts of bilge fluid splashing around as the vessel experienced minor rolling from minor wave action

The transformers must be raised slightly to enable the installation of the splash shield. Also, before the checker plate shields are installed the temporary hood style shields presently mounted on the transformer fronts must be removed to permit proper ventilation.



To raise the transformers slightly two end supports must be fabricated and a piece of square channel is used for the backbone. The pic to the left shows the aluminum support for the forward end. This support sets on the deck and several ratchet tie downs are used to strap the support to the upright stanchion shown in the pic.

This pic shows the aft support. As there is room at this end of the transformer installation the support straddles the transformer bed. the base of the support is a T and simply sets in place. The front end of the transformer bed does not have sufficient room to utilize the same support design.





Once the two end supports and strong back is in place you simply remove the transformer securing bolts and use wide ratchet straps to rise the transformers approx. ½ inch which will allow the splash shield to slip into place. Care must be take to raise and lower the transformers simultaneously so as not to damage the conduit connections between the transformers. Transformers must be powered down to complete this task.

**Lb11.7.C.1** This lifting approach works well in this tight area and can be utilized for both transformer banks in the AMR space.

**LB11.8      INSTALLATION OF A HEATED VENT ON THE POTABLE  
WATER TANK VENTS**

Lb11.8.A    **Scope**

**Lb11.8.A.1** During winter, the vents for the potable water vents have a tendency to freeze. The installation of a heated vent is necessary to solve this problem.

Document	Title	Included
Plan		
Publications		
	Winteb wiko 5000 gooseneck type 1	yes
Standards		
TP 127E	Electrical standards for ships	no
Regulations		
	Lloyd’s special Service Craft 2016	
	Loi sur la marine marchande du Canada, 2001	

Lb11.8.B    **Equipment supplied by owner**

**Lb11.8.B.1** Unless otherwise indicated, the Contractor must supply all the material, equipment and parts necessary to perform the work in the specifications.

**Lb11.8.B.2** Canada supplies 4 WIKO 5000 Gooseneck type 1 vents. (2 per ship).

Lb11.8.C    **Technical Description**

**Lb11.8.C.1** The Contractor must run the wires to reach both heated vents.

**Lb11.8.C.2** The Contractor must protect the wire where the wire is on the open deck.

**Lb11.8.C.3** The Contractor must agree with the chief engineer as to where the power will be taken for the 2 150W vents.

**Lb11.8.C.4** The compartement next to the potable water tank is the bow thruster room. Where the wire will be able to go up through the deck. There is currently no transit to go up on the deck.

**Lb11.8.C.5** The Contractor must repair any insulated surface that is damaged during the work.



Figure 18: Port Aft corner of the bow thruster room



Figure 17: Distance between the end of the fresh water tank and the vent

#### Lb11.8.D **Proof of performance**

##### **Lb11.8.D.1** Inspection

11.8.D.1.1 The work must be to the satisfaction of the chief engineer

11.8.D.1.2 The Contractor must demonstrate that the vents are operational.

11.8.D.1.3 The Contractor must provide a report indicating any irregularities found.  
L'entrepreneur doit démontrer que les transits qui ont été ouverts sont étanches lorsque le travail est fini.

11.8.D.1.4 L'entrepreneur doit démontrer que la prise de courant est fonctionnelle.

##### **Lb11.8.D.2** LIVRABLES

11.8.D.2.1 Dessins/rapports

11.8.D.2.2 L'entrepreneur remettra au chef mécanicien une copie papier de son rapport tapé qui détaille les inspections, les modifications et les réparations apportées avant acceptation du présent élément. L'entrepreneur enverra également une copie électronique de tous les rapports et certificats au responsable de l'entretien du navire.

## **LB12 Propulsion**

### **LB12.1 NOT USED**

## **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.

#### 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.

13.1.D.1.3 For the purposes of the bid, please provide specialist electrician labour for a period of ten (10) hours to perform the work.

**Lb13.1.D.2 Obstructions**

13.1.D.2.1 The Contractor is responsible for identifying items causing an obstruction, temporarily removing and storing them, and then reinstalling them on the vessel.

**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.

**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 Vessel Maintenance Manager.

## **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 **RÉFÉRENCES**

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.

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)
- Many emergency panel
- 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

14.1.D.1.7 For the purposes of the bid, please provide specialist electrician labour for a period of forty (40) hours to perform the work.

**Lb14.1.D.2 Obstructions**

14.1.D.2.1 The Contractor is responsible for identifying items causing an obstruction, temporarily removing and storing them, and then reinstalling them on the vessel.

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 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 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.

**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 : <a href="https://www.tc.gc.ca/fra/securitemaritime/tp-tp127-menu-263.htm">https://www.tc.gc.ca/fra/securitemaritime/tp-tp127-menu-263.htm</a>	
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

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

14.2.D.1.2 For the purposes of the bid, please provide specialist electrician labour for a period of forty (40) hours to perform the work.

**Lb14.2.D.2 Obstructions**

14.2.D.2.1 The Contractor is responsible for identifying items causing an obstruction, temporarily removing and storing them, and then reinstalling them on the vessel.

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 Vessel Maintenance Manager.

**LB14.3      PUMP POWER MODIFICATION**

Lb14.3.A    **Scope**

**Lb14.3.A.1** Objective

**14.3.A.1.1** The objective is to ensure the continuity of operation of stern tube bearing cooling and propeller pitch control in the case of black-out. Additionally, to ensure that both machinery rooms (AMR and MMR) maintain capability to pump the water out in case of possible water ingress.

**Lb14.3.A.2** Background

14.3.A.2.1 Canadian Coast Guard (CCG) took acceptance of nine new Mid-Shore Patrol Vessels (MSPV) built by Irving Shipyards between 2012 and 2014 under “Lloyd’s Rules and Regulations for the Classification of Special Service Craft, 2009”.

Lb14.3.B    **Ships Particulars:**

Length Over All	42.8 m
Length at Water Line	39.9 m
Max Beam	7.0 m
Beam at Water Line	6.8 m
Fwd Draft	2.8 m
Aft Draft	2.8 m
Freeboard	1.7 m
Gross Tonnage	253.0 t
Cruising Range	2000 nm
Endurance	14 d
Cruising Speed	14.0 kts
Maximum Speed	25.0 kts

Class Notations

Hull Notation:                    +100A1 SSC PATROL, MONO, HSC, G4, EP.

Descriptive Notes:              ABBREVIATED NOTE GREEN PASSPORT

**Lb14.3.B.1** Previously reported incidents revealed that while main engines operation is not affected by black-out condition, stern tube bearing cooling and propeller pitch control cannot be recovered even when Emergency Generator is connected. Additionally, both machinery rooms lose capability to pump the water out in case of possible water ingress. Although approved by LR Class, the present configuration impairs operational capabilities of the vessel and this modification is required as a risk mitigation factor.

**Lb14.3.B.2** Upon completion of this work the aforementioned critical systems should continue to support both the maneuvering and pumping capability from the emergency switchboard.

**Lb14.3.C Terminologie**

AMR	Auxiliary Machine Room		<b>Salle des machines auxiliaires</b>
BKR	Breaker		<b>Disjoncteur</b>
CPP	Controllable Pitch Propelle		<b>Hélice à pas variable</b>
ESB	Emergency Switch Board		<b>Tableau de distribution de secours</b>
LR	Loyd's Register	LR	<b>LR – Lloyd's Register</b>
MMR	Main Machinery Room		<b>Salle des machines principales</b>
MSB	Main Switch Board	TDP	<b>TDP – Tableau de distribution principal</b>
P	Port	P	<b>P – Bâbord</b>
Stb	Stb Starboard		<b>Tribord</b>
SW	Sea Water		<b>Eau de mer</b>

**Lb14.3.D Documents de référence**

1. TP127E, Ships Electrical Standards: <a href="http://www.tc.gc.ca/eng/marinesafety/tp-tp127-menu-263.htm">http://www.tc.gc.ca/eng/marinesafety/tp-tp127-menu-263.htm</a>
24. Lloyd's Rules and Regulations for the Classification of Special Service Craft, 2009
25. LR Design Appraisal Document ATS-4413149-E-001-DAD
26. Single Line Diagram AF6094-32000-01, Sheet 2/10
27. Single Line Diagram AF6094-32000-01 Sheet 3/10
28. Techsol Switchboard Drawing SB00BB
29. Techsol Switchboard Drawing SB09BA
30. Techsol Switchboard Drawing SB09DA
31. Techsol Switchboard Drawing SBZZDC
32. Techsol Switchboard Drawing SBZZDD
33. Techsol Switchboard Drawing SB13AA
34. DIN rail mounted 3-pos switch.jpg

35. CPP press maint pump.jpg
36. Lamacoid size_1.jpg
37. Lamacoid size_2.jpg
38. Lamacoid size_3.jpg
39. Lamacoid size_4.jpg
40. Lamacoid for SW cool pump.jpg
41. Lamacoid for ESB breakers.jpg
42. Rolls Royce drawing RRM200007039_page 1
43. Rolls Royce drawing RRM200007039_page 2
44. Lamacoid for BKR 2Q03.jpg
45. Lamacoid for BKR 2Q13.jpg

Lb14.3.E **Requirements**

**Lb14.3.E.1** Scope of Work

14.3.E.1.1 The scope of work includes the following tasks:

**Lb14.3.E.2** General requirements.

14.3.E.2.1 Modification of CPP STB Pressure Maintaining Pump (P104), 1.8 kW.

14.3.E.2.2 Modification of CPP PS Pressure maintaining Pump (P422), 1.8 kW.

14.3.E.2.3 Modification of SW Service Cooling Pump 2 (P404), 4.6 kW.

14.3.E.2.4 Modification of Bilge/Fire Pump MMR (P411), 6.4 kW.

14.3.E.2.5 To be noted that two CPP Pressure Maintaining Pumps must retain the existing feed from the MSB and additionally be provided with an alternative power feed from the ESB through a change-over selector switch. The SW Service Cooling Pump 2 and MMR Bilge/Fire Pump will have their power feeds moved from the MSB to ESB.

Lb14.3.F **Tasks**

**Lb14.3.F.1** General requirements:

- 14.3.F.1.1 The Contractor must make the appropriate wiring changes in accordance with the Class approved drawings listed in the Reference Documents.
- 14.3.F.1.2 All new cabling must meet Low Smoke (IEC61034-1&2)/Zero Halogen (IEC60754-1&2) requirements.
- 14.3.F.1.3 All new cabling must have a 600V/1kV voltage rating.
- 14.3.F.1.4 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 shall inform the Chief Engineer who will complete a final inspection to ensure the integrity of the transit.
- 14.3.F.1.5 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.
- 14.3.F.1.6 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.
- 14.3.F.1.7 The completed work must comply with the Rules and Regulations for the Classification of Special Service Craft, 2009 and the applicable parts of Ships Electrical Standards TP127E.
- 14.3.F.1.8 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.
- 14.3.F.1.9 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.

- 14.3.F.1.10 The Contractor must update any existing Lamacoids related to this project and also the addition of new Lamacoids to identify the configuration changes.
- 14.3.F.1.11 The Contractor must provide Lamacoids in two sets: one set is in English and the second set is in French language.
- 14.3.F.1.12 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.
- 14.3.F.1.13 The Contractor must not make any alterations to the drawings/specifications until the issue has been discussed with CCG.

**Lb14.3.F.2** Modification of CPP STB Pressure Maintaining Pump (P104), 1.8 kW:

- 14.3.F.2.1 Prior to commencement of any work the Contractor must request the Chief Engineer's assistance to change the valve configuration on the CPP system to permit operation of the pitch control from the local joy stick utilizing the Pressure Maintaining Pump. The Contractor must start the Pressure Maintaining Pump and document the direction of rotation.
- 14.3.F.2.2 The Contractor must isolate the power at the main switchboard, disconnect the supply and load sides of the old switch (Q1, see ref. docs #20, #21) located in the local control panel for the Pressure Maintaining Pump and remove the switch.
- 14.3.F.2.3 The Contractor must pull a new cable from breaker 2Q06 (ref. doc. #19 shows 2Q13 being used instead) located in the emergency switchboard back to the CPP controller located in the MMR.
- 14.3.F.2.4 The Contractor must mount the new 3 position switch as per the picture supplied by CCG (see reference document #12). Connect the feed from the main switchboard to position 1 on the new switch. Connect the new feed from the emergency switchboard to position 2 on the three position switch. Connect what used to be the load side conductors on the old switch to the common position on the new switch.

14.3.F.2.5 The Contractor must provide new Lamacoids to be permanently mounted on the controller front door. The first Lamacoid must have four lines: “DANGER” in capital letters at the top, “more than one power source” on the next line, “Main SWBD BKR 1Q04” on the next line, and “EMERGENCY SWBD BKR 2Q06” on the last line (see ref. doc. #13, 14, 15). The second Lamacoid must contain three lines starting from top to bottom “1 – MAIN SWBD, 0 – OFF, 2 – EMERGENCY SWBD” (see ref. doc #13, 16, 17). The Lamacoids must be white lettering on a red background.

14.3.F.2.6 The Contractor must update the Lamacoid at the emergency switchboard breaker 2Q06 to reflect the change in circuit description from “SPARE” to “CPP STB Press Maintaining PUMP”.

14.3.F.2.7 Upon completion of all work the Contractor, under the supervision of the Chief Engineer must start the system and complete a short trial to ensure proper rotation of the pump when fed from either the “Main” or Emergency” power sources.

**Lb14.3.F.3** Modification of CPP PS Pressure maintaining Pump (P422), 1.8 kW:

14.3.F.3.1 Prior to commencement of any work the Contractor must request the Chief Engineer’s assistance to change the valve configuration on the CPP system to permit operation of the pitch control from the local joy stick utilizing the Pressure Maintaining Pump. The Contractor must start the Pressure Maintaining Pump and document the direction of rotation.

14.3.F.3.2 The contractor must isolate the power at the main switchboard (4Q22), disconnect the supply and load sides of the old switch located in the local control panel for the Pressure Maintaining Pump and remove the switch.

14.3.F.3.3 The Contractor must pull a new cable from breaker 2Q08 located in the emergency switchboard back to the CPP controller located in the MMR.

14.3.F.3.4

14.3.F.3.5 The Contractor must mount the new 3 position switch as per the picture supplied by CCG (see ref. doc. #12). The Contractor must connect the feed from the main switchboard to position 1 on the new switch, connect the new feed from the emergency switchboard to position 2 on the three position switch and connect what used to be the load side conductors on the old switch to the common position on the new switch.

14.3.F.3.6 The Contractor must provide two new Lamacoids to be permanently mounted on the controller front door. The first Lamacoid must have four lines: "DANGER" in capital letters at the top, "more than one power source" on the next line, "Main SWBD BKR 4Q22" on the next line, and "EMERGENCY SWBD BKR 2Q08" on the last line (see ref. doc. #13, 14, 15). The second Lamacoid must contain three lines starting from top to bottom "1 – MAIN SWBD, 0 – OFF, 2 – EMERGENCY SWBD" (see ref. doc #13, 16, 17). The Lamacoids must be white lettering on a red background.

**Lb14.3.F.4** The contractor must update the Lamacoid at the emergency switchboard breaker 2Q08 to reflect the change in circuit description from "SPARE" to "CPP PS Press Maintaining Pump".

14.3.F.4.1 Upon completion of all work the Contractor, under the supervision of the Chief Engineer must start the system and complete a short trial to ensure proper rotation of the pump when fed from either the "Main" or "Emergency" power sources.

**Lb14.3.F.5** Modification of SW Service Cooling Pump 2 (P404), 4.6 kW:

- 14.3.F.5.1 Prior to commencement of any work on the pump controller the Contractor must start the pump and document the direction of rotation.
- 14.3.F.5.2 In the main switchboard MCC section, the Contractor must locate and disconnect the feed cable for the Sea Water Cooling Pump #2 bucket (P404), tape the ends of the conductors and secure the cable behind the MCC with tie wraps so that the cable will not become an electrical or mechanical hazard. The Contractor must attach a tag to the leads which will identify where the cable was previously terminated and also identify it as a spare.
- 14.3.F.5.3 The Contractor must pull in a new cable from 2Q03 in the emergency switchboard to the 4Q04 location in the main switchboard. The Contractor must request the Chief Engineer to identify the cable routing and penetrations to be utilized for the cable run.
- 14.3.F.5.4 The Contractor must confirm correct rotation of the pump once all installation work is completed on this system.
- 14.3.F.5.5 The Contractor must fabricate a new Lamacoid to be permanently mounted on the Port MCC Unit 2-B SW Service Cooling Pump 2 (see ref. doc. #18) which must indicate “ FEED EMERGENCY SWBD DIST – 600V BKR 2Q03” (see ref. doc. #22). The Lamacoid shall be white lettering on a red background.
- 14.3.F.5.6 The Contractor must update the Lamacoid at the emergency switchboard breaker 2Q03 to reflect the change in circuit description from “SPARE” to “CPP STB Press Maintaining Pump.
- 14.3.F.5.7 Upon completion of all work the Contractor, under the supervision of the Chief Engineer must start the system and complete a short trial to ensure proper rotation of the pump.

**Lb14.3.F.6** Modification of Bilge/Fire Pump MMR (P411), 6.4 kW:

- 14.3.F.6.1 Prior to commencement of any work on the Bilge/Fire Pump controller the Contractor must start the pump and document the direction of rotation.
- 14.3.F.6.2 In the main switchboard MCC-PORT Unit 2-D, the Contractor must locate and disconnect the feed cable for the Bilge/Fire Pump MMR (1/2), tape the ends of the conductors and secure the cable behind the MCC with tie wraps so that the cable will not become an electrical or mechanical hazard. The Contractor must attach a tag to the leads which will identify where the cable was previously terminated and also identify it as a spare.
- 14.3.F.6.3 The Contractor must pull in a new cable from 2Q13 in the emergency switchboard to the 4Q11 location in the main switchboard/PORT. The Contractor must request the Chief Engineer to identify the cable routing and penetrations to be utilized for the cable run.
- 14.3.F.6.4 The Contractor must confirm correct rotation of the pump once all installation work is completed on this system.
- 14.3.F.6.5 The Contractor must fabricate a new Lamacoid to be permanently mounted on the Port MCC Unit 2-D Bilge/Fire Pump MMR (1/2) which must indicate “FEED EMERGENCY SWBD DIST – 600V BKR 2Q13” (see ref. doc. #23). The Lamacoid must be white lettering on a red background.
- 14.3.F.6.6 The Contractor must update the Lamacoid at the emergency switchboard breaker 2Q13 to reflect the change in circuit description from “SPARE” to “Bilge/Fire Pump MMR”.
- 14.3.F.6.7 Upon completion of all work the Contractor, under the supervision of the Chief Engineer must start the system and complete a short trial to ensure proper rotation of the pump.

Lb14.3.G **Constraints**

**Lb14.3.G.1** Availability of CCG personnel;

**Lb14.3.G.2** No access to CCG network;

**Lb14.3.G.3** CCG will not supply any referenced Standards or Classification Societies documentation.

Lb14.3.H Owner Supplied Equipment

**Lb14.3.H.1** CCG will supply the 3 position changeover switch assembly to replace the Q1 switch in Rolls Royce drawing RRM200007039 (see ref. docs #20, 21). Position 1 must be connected to the main switchboard feed; position 2 must be connected to the Emergency Switchboard feed (Port-E208 / STB-E206); the ZERO Position must be the off position. The common output must be connected to the feed for the Service Pump controller as per Rolls Royce drawing RRM200007039 (see ref. docs #20, 21). The part numbers for the replacement switch are as follows:

**194L-A25-350-3** three pole changeover switch 25 amp

**194L-HE4A-350** Actuator C/W Escut/Knob

**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		
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 run the new marine wire using existing wire passages.

**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

# **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 to the crew and an electronic copy sent to the technical authority.

**Lb18.1.A.4** The Contractor shall 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	
Reciever for global navigation satellite systems and terrestrial radionavigation systems	GPS SAAB R4	SAAB	
AIS	AIS R4	SAAB	

