

**RETURN BIDS TO:**  
**RETOURNER LES SOUMISSIONS À:**  
**Bid Receiving - PWGSC / Réception des**  
**soumissions - TPSGC**  
**11 Laurier St. / 11, rue Laurier**  
**Place du Portage , Phase III**  
**Core 0A1 / Noyau 0A1**  
**Gatineau, Québec K1A 0S5**  
**Bid Fax: (819) 997-9776**

## **INVITATION TO TENDER**

## **APPEL D'OFFRES**

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

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

### **Soumission aux: Travaux Publics et Services Gouvernementaux Canada**

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

### **Comments - Commentaires**

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

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

<b>Title - Sujet</b> CCGS F.G. Creed Winter Storage	
<b>Solicitation No. - N° de l'invitation</b> F3084-13N158/A	<b>Date</b> 2013-10-15
<b>Client Reference No. - N° de référence du client</b> F3084-13-N158	<b>GETS Ref. No. - N° de réf. de SEAG</b> PW-\$\$MD-018-24076
<b>File No. - N° de dossier</b> 018md.F3084-13N158	<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 2013-10-30</b>	
<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Daylight Saving Time EDT	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Vandal, Paul	<b>Buyer Id - Id de l'acheteur</b> 018md
<b>Telephone No. - N° de téléphone</b> (819) 956-0645 ( )	<b>FAX No. - N° de FAX</b> (819) 956-0897
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> PÊCHES ET OCÉANS CANADA GARDE CÔTIÈRE CANADIENNE NGCC FREDERICK G CREED 101 BOUL. CHAMPLAIN QUÉBEC Québec G1K7Y7 Canada	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

<b>Delivery Required - Livraison exigée</b> See Herein	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<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 (7) 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 Financial and Other Requirements: includes specific requirements that must be addressed by bidders; and
- Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Technical Specification, the Basis of Payment, the Insurance Requirements and other Annexes.

### 1.2 Summary

1. The Requirement is:
  - a) to carry out the docking, maintenance and alterations of the Canadian Coast Guard Vessel CCGS Frederick G. Creed in accordance with the associated Technical Specifications detailed in Annex "A".
  - b) to carry out unscheduled work authorized by the Contracting Authority.
2. The requirement is exempt from the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), Annex 4 and the North American Free Trade Agreement (NAFTA), Chapter Ten Annex 1001.2b Paragraph 1(a). However, it is subject to the Agreement on Internal Trade (AIT).

### 1.3 Debriefings

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

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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 (2013-06-01) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

### 2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

### 2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than **three (3) working days** before the bid closing date. Enquiries received after that time may not be answered.

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

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

### 2.4 Applicable Laws

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

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

**Refer to Annex "I1" for Deliverables/Certifications.**

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## **2.5 Work Period - Marine**

Work must commence and be completed as follows:

**Commence: November 12, 2013**

**Complete: April 20, 2014**

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

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

### **3.1 Bid Preparation Instructions**

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

- Section I - Technical Bid (2 hard copies)
- Section II - Financial Bid (1 hard copy)
- Section III - Certifications (1 hard copy)

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

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

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

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

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

#### **Section I: Technical Bid**

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

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

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

#### **Section III: Certifications**

Bidders must submit the certifications required under Part 5.



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### 3.1.1 Unscheduled Work and Evaluation Price

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

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

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

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## **PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION**

### **4.1 Evaluation Procedures**

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

### **Section I - Technical Bid / Certifications**

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

### **Section II - Financial Bid**

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

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

#### **4.1.1 Evaluation of Price**

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

### **4.2 Basis of Selection**

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

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

### **4.3. Deliverables after Contract Award**

Refer to Annex "I2".

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## **PART 5 - CERTIFICATIONS**

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

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

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

### **5.1 Mandatory - Certifications Required Precedent to Contract Award**

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

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

## PART 6 - FINANCIAL AND OTHER REQUIREMENTS

### 6.1 Vessel Transfer Costs

Vessel Transfer Costs will apply to the evaluation price of this solicitation.

1. The evaluation price must include the cost for transferring the vessel from its home port to the shipyard/ship repair facility where the Work will be performed and the cost of transferring the vessel to its home port following completion of the Work, in accordance with the following:

(a) The Bidder must provide the location of the shipyard/ship repair facility where it proposes to perform the Work together with the applicable vessel transfer cost from the list provided under paragraph 2 of this clause shall be entered into Table G1:

(b) If the list in paragraph 2 of this clause does not provide the shipyard/ship repair location where the Bidder intends to perform the Work, then the Bidder must advise the Contracting Authority, in writing, at least **5 calendar days** before the bid closing date, of its proposed location for performing the Work. The Contracting Authority will confirm to the Bidder, in writing, at least **5 calendar days** before the bid closing date, the location of the shipyard/ship repair and the applicable vessel transfer cost.

A bid that specifies a location for executing the Work which is not on the list of paragraph 2 of this clause, and for which a notification in writing has not been received by the Contracting Authority as required above, will be considered non-responsive.

2. List of shipyard/ship repair facilities and applicable vessel transfer costs

Vessel: CCGS Frederick G. Creed  
Home port: Rimouski, Quebec

Transfer costs in the case of vessels transferred using a government delivery crew include the fuel cost at the vessel's most economical speed of transit and for unmanned refits only, crew transportation costs for the delivery crew based on the location of the vessel's home port and the shipyard/ship repair facility. Crew transportation costs do not include any members of the delivery crew who remain at the shipyard/ship repair facility in order to discharge project responsibilities related to the vessel being transferred.

Transfer costs in the case of vessels transferred unmanned by either commercial towing, railway, highway or other suitable means of transportation must be:

(i) included as part of the Bidder's financial bid in the case where the Bidder is responsible for the transfer; or

(ii) identified as the applicable vessel transfer cost, as given in the list below, in the case when Canada is responsible for the transfer.

**Shipyard/ship repair facility****Applicable vessel transfer cost**

<b>Company</b>	<b>City</b>	<b>Transfer Cost UnManned</b>
Chantier Davie Canada Inc.	Lévis, Québec	C\$5,891.00
Méridien Maritime	Matane, Québec	C\$4,521.00
Chantier Naval Forillon	Gaspé, Qc	C\$6,818.00
Ocean Industries	Isle-aux-Coudres QC	C\$2,301.00
Verreault Navigation Inc.	Les Méchins QC	C\$5,845.00

**Proposed Drydocking Location :** \_\_\_\_\_

**Refer to Annex "I1" for Deliverables/Certifications.**

## **6.2 Docking Facility**

Before contract award, the successful Bidder may be required to demonstrate to the satisfaction of Canada that the certified capacity of the docking facility, including any means or conveyance to remove the vessel from the water, is adequate for the anticipated loading in accordance with the related dry docking plans and other documents detailed in the Contract. The successful Bidder will be notified in writing and will be allowed a reasonable period of time to provide detailed keel block load distribution sketches and blocking stability considerations, along with the supporting calculations to show the adequacy of the proposed docking arrangement.

At the time of bid closing the Bidder must provide current and valid certification of the capacity and condition of the docking facility to be used for the Work. The certification must be provided by a recognized consultant or classification society and must have been issued within the past two years.

Although a dry docking facility may have a total capacity greater than the vessel to be docked, the weight distribution of the vessel may cause individual block loading to be exceeded. Also, while the physical dimensions of a dry docking facility may indicate acceptability for docking of a specific vessel, other limitations such as spacing of rails on a marine railway, concrete piers of abutments adjoining the dry dock may, preclude the facility from being considered as a possible dry docking site and render the bid non-responsive.

**Refer to Annex "I1" for Deliverables/Certifications.**

## **6.3 Workers' Compensation - Letter of Good Standing**

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

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

**Refer to Annex "I1" for Deliverables/Certifications.**

## 6.4 Valid Labour Agreement

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

**Refer to Annex "I1" for Deliverables/Certifications**

## 6.5 Preliminary Work Schedule

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

**Refer to Annex "I1", Deliverables/Certifications.**

## 6.6 ISO 9001:2008 - Quality Management Systems

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

- If registered its valid ISO 9001-2008 certification;
- Example of Quality Control Plan (QCP) as per clause 6.11

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

**Refer to Annex "I1" for Deliverables/Certifications.**

## 6.7 Hazardous Waste

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

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

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

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## 6.8 Insurance Requirements

The Bidder must provide with its bid a letter from an insurance broker or an insurance company licensed to operate in Canada stating that the Bidder, if awarded a contract as a result of the bid solicitation, can be insured in accordance with the Insurance Requirements specified in Annex "C". If this information is not provided with the bid it will render the bid non-responsive.

**Refer to Annex "I1", Deliverables/Certifications.**

## 6.9 Welding Certification

1. Welding must be performed by a welder certified by the Canadian Welding Bureau and in accordance with the requirements of the following Canadian Standards Association (CSA) standards:

- (a) CSA W47.1-03, Certification for Companies for Fusion Welding of Steel (Minimum Division Level 2.1); and
- (b) CSA W47.2-M1987 (R2003), Certification for Companies for Fusion Welding of Aluminum (Minimum Division Level 2.1).

The bidder shall submit proof of certification with the bid. The certification shall remain valid for the duration of the contract. If this information is not provided with the bid it will render the bid non-responsive.

**Refer to Annex "I1" for Deliverables/Certifications.**

## 6.10 List of Proposed Subcontractors

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

**Refer to Annex "I1" for Deliverables/Certifications.**

## 6.11 Quality Control Plan

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

**Refer to Annex "I1" for Deliverables/Certifications.**

## 6.12 Inspection and Test Plan

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

**Refer to Annex "I1" for Deliverables/Certifications.**

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### **6.13 Environmental Protection**

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

**Refer to Annex "I1" for Deliverables/Certifications.**



## PART 7 - RESULTING CONTRACT CLAUSES

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

### 7.1 Requirement

The Contractor must:

- a) carry out the docking, maintenance and alterations of the Canadian Coast Guard Vessel CCGS Frederick G. Creed in accordance with the associated Technical Specifications detailed in the Requirement and attached as Annex "A".
- b) carry out any unscheduled work authorized by the Contracting Authority.

### 7.2 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual

(<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

#### 7.2.1 General Conditions

**1031-2 (2012-07-16), Contract Cost Principles, apply and form part of the Contract.**

**2030 (2013-06-27), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.**

**2030 (2013-06-27) General Conditions Higher Complexity - Goods are hereby amended as follows:**

#### **Section 22 Warranty**

1. The Contractor, if requested by Canada, must replace or repair at its own expense any finished work, excluding Government Issue incorporated in the Work, which becomes defective or which fails to conform to contract requirements as a result of faulty or inefficient manufacture, material or workmanship.
2. Despite acceptance of the finished work, and without restricting any other term of the Contract or any condition, warranty or provision imposed by law, the Contractor warrants that the following will be free from all defects and will conform with the requirements of the Contract:
  - (a) The painting of the underwater portion of the hull for a period of 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 365 days and multiplied by the number of days remaining in the warranty period. The resultant sum would represent the "Dollar Credit" due to Canada from the Contractor.

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

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

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

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

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

4. Refer to Annex "D" and its Appendix "1" for Warranty Defect Claim Procedures and forms.

## **7.2.2 Supplemental General Conditions**

**1029 (2010-08-16) Ship Repairs - (excluding article 08) apply and form part of the Contract**

## **7.3 Term of Contract**

### **7.3.1 Work Period - Marine**

1. Work must commence and be completed as follows:

Commence: November 12, 2013

Complete: April 20, 2014

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

Canada has the right to delay the arrival of the Vessel at the Contractor's facility subject to the following conditions:

a) Canada gives 30 calendar days advance notice of a 15 day maximum delay.

The Contractor may claim no additional cost when arrival of the vessel at the Contractor's facility is delayed up to a maximum of 15 calendar days beyond the commencement date, above. The Completion Date shall be extended by a period equal to the length of the delay.

b) Canada does not provide 30 calendar days advance notice of a delay.

The Completion Date shall be reasonably adjusted to reflect the impact of the delay on the arrival of the Vessel and Canada shall pay only the Daily Services Fee referred to in the Basis of Payment for the period of the delay.

## **7.4 Authorities**

### **7.4.1 Contracting Authority**

The Contracting Authority for the Contract is:

Paul Vandal  
Department of Public Works and Government Services Canada (PWGSC)  
Defence and Major Projects Sector  
PWGSC, 6C2 Place du Portage, Phase III  
11 Laurier Street,  
Gatineau, Quebec, K1A 0S5  
Tel: (819) 956-0645 Fax: (819) 956-0897  
E-Mail - paul.vandal@pwgsc.gc.ca

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

### **7.4.2 Technical Authority**

The Technical Authority for the Contract is:

Jean-Pierre Munger  
Central & Arctic Region  
Canadian Coast Guard  
Fisheries & Oceans Canada  
101 boul. Champlain  
Québec, Qc  
G1K 7Y7  
Téléphone (418) 648-5440  
Cellulaire (418) 928-5864  
E-mail: Jean-Pierre.Munger@dfo-mpo.gc.ca

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

### 7.4.3 Inspection Authority

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

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

## 7.5 Payment

### 7.5.1 Basis of Payment - Firm Price

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

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

### 7.5.2 Terms of Payment - Progress Payment

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

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

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

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

**7.6 Invoicing Instructions**

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

**7.6.1 Invoices**

1. Invoices are to be made out to:

Department of Fisheries and Oceans  
Canadian Coast Guard  
Finance  
Quebec Region  
101, Blvd. Champlain  
Québec, QC  
G1K 7Y7

And

**The original invoice to be forwarded for verification to:**

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

2. Canada will only make payment upon receipt of a satisfactory invoice duly supported by specified release documents and any other documents called for under the Contract.
3. The Contractor shall not submit an invoice prior to the completion and acceptance of the Work or shipment of the items to which it relates.

## 7.6.2 Invoicing Instructions - Progress Claim

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

Each claim must show:

- (a) all information required on form PWGSC-TPSGC 1111;
  - (b) all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
2. Applicable Taxes must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no Applicable Taxes payable as it was claimed and payable under the previous claims for progress payments.
  3. The Contractor must prepare and certify one original and two (2) copies of the claim on form PWGSC-TPSGC 1111, and forward it to the Contracting Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

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

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

## 7.6.3 Warranty Holdback

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

## 7.7 Certifications

### 7.7.1 Compliance

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

### 7.7.2 Federal Contractors Program for Employment Equity - Default by the Contractor

The Contractor understands and agrees that, when an Agreement to Implement Employment Equity (AIEE) exists between the Contractor and HRSDC-Labour, the AIEE must remain valid during the entire period of the Contract. If the AIEE becomes invalid, the name of the Contractor will be added to the "[FCP Limited Eligibility to Bid](#)" list. The imposition of such a sanction by HRSDC will constitute the Contractor in default as per the terms of the Contract.

## 7.8 Applicable Laws

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

## 7.9 Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the Supplemental General Conditions 1029, (2010-08-16), Ship Repairs;
- (c) the General Conditions 2030, (2013-06-01), General Conditions - Higher Complexity - Goods;
- (d) the General Conditions 1031-2, (2012-07-16), Contract Cost Principles;
- (e) Annex "A", Statement of Work;
- (f) Annex "B", Basis of Payment;
- (g) Annex "C", Insurance Requirements;
- (h) Annex "D", Warranty;
- (i) Annex "E", Procedure for Unscheduled Work;
- (j) Annex "F", Quality Control/Inspection;
- (k) Annex "G", Financial Bid Presentation Sheet;
- (l) Annex "H", Vessel Turnover
- (m) Annex "I", Deliverables/Certifications
- (n) the Contractor's bid dated \_\_\_\_\_ (insert date of bid), as amended \_\_\_\_\_ (insert date(s) of amendment(s) if applicable)

## 7.10 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 does not release the Contractor from or reduce its liability under the Contract.

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

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

## 7.11 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:
  - (a) any infringement of intellectual property rights;
  - (b) any breach of warranty obligations; or
3. Each Party agrees that it is fully liable for any damages that it causes to any third party in connection with the Contract, regardless of whether the third party makes its claim against Canada or the Contractor. If Canada is required, as a result of joint and several liability, to pay a third party in respect of damages caused by the Contractor, the Contractor must reimburse Canada for that amount.

## 7.13 Sub-contracts and Sub-contractor List

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

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

## 7.14 Work Schedule and Reports

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

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

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

## 7.15 Insulation Materials - Asbestos Free

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



## 7.16 Trade Qualifications

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

## 7.17 ISO 9001:2008 - Quality Management Systems

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

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

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

## 7.18 Quality Control Plan

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

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

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

**Refer to Annex "F" for details.**

## 7.19 Inspection and Test Plan

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

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

**Refer to Annex "F" for details.**

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## 7.20 Equipment/Systems: Inspection/Test

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

**Refer to Annex "F" for details.**

## 7.21 Environmental Protection

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

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

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

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

## 7.22 Hazardous Waste

1. The Contractor acknowledges that sufficient information has been provided by Canada with respect to the location and estimated amount of hazardous materials such as asbestos, lead PCBs, silica or other hazardous materials or toxic substances.
2. The price includes all costs associated with the removal, handling, storage, disposal and/or working in the vicinity of hazardous materials such as asbestos, lead, PCBs, silica and other hazardous materials or toxic substances on board the vessel, including those costs resulting from the need to comply with applicable laws and regulations in relation to the removal, handling, disposal or storage of hazardous materials or toxic substances.
3. The completion date for the Work takes into account the fact that the removal, handling, storage, disposal and/or working in the vicinity of hazardous materials such as asbestos, lead, PCBs, silica and other hazardous materials or toxic substances may be affected by the need to comply with applicable federal, provincial and municipal laws or regulations and that this will not be considered to be an excusable delay.

### **7.23 Fire Protection, Fire Fighting and Training**

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

### **7.24 Welding Certification**

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

- (a) CSA W47.1-03, Certification for Companies for Fusion Welding of Steel (Minimum Division Level 2.1); and
- (b) CSA W47.2-M1987 (R2003), Certification for Companies for Fusion Welding of Aluminum (Minimum Division Level 2.1).

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

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

### **7.25 Procedures for Design Change or Additional Work**

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

**In addition, refer to Annex "E".**

### **7.26 Vessel Unmanned Refits**

The vessel will be unmanned during the work period and will be considered to be out-of commission. The vessel during that period will be in the care or custody of the Contractor and under its control.

**Refer to Annex "H" for details.**

### **7.27 Pre-Refit Meeting**

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

## **7.28 Outstanding Work and Acceptance**

1. The Inspection Authority, in conjunction with the Contractor, will prepare a list of outstanding work items at the end of the work period. This list will form the annexes to the formal acceptance document for the vessel. A contract completion meeting will be convened by the Inspection Authority on the work completion date to review and sign off the form PWGSC-TPSGC1205, Acceptance. In addition to any amount held under the Warranty Holdback Clause, a holdback of twice the estimated value of outstanding work will be held until that work is completed.
2. The Contractor must complete the above form in three (3) copies, which will be distributed by the Inspection Authority as follows:
  - (a) original to the Contracting Authority;
  - (b) one copy to the Technical Authority;
  - (c) one copy to the Contractor.

## **7.29 Scrap and Waste Material**

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

## **7.30 Stability**

The Contractor will be solely responsible for the stability and trim of the ship during the period the vessel is in the Contractor's facility, including docking and undocking. The Contractor must maintain weight change information pertinent to the vessel's stability during the docking period. The Technical Authority will supply the Contractor with cross curves of stability, hydrostatic curves, tank status, location of centre of gravity, and other information relevant to the ship's condition upon handing over of the vessel.

## **7.31 Vessel Access by Canada**

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

## **7.32 Title to Property - Vessel**

If the Contractor is in default in carrying any of its obligations under the Contract, Canada, or its agents, will have the immediate right to enter the shipyard, without first obtaining a court order, to take possession of the vessel and all other property of Canada, including, but not limited to, work-in-process located on the premises, and to perform any further work required to enable the vessel and other such property to be removed from the shipyard.

## **7.33 Workers Compensation**

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

Solicitation No. - N° de l'invitation

F3084-13N158/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

018md

Client Ref. No. - N° de réf. du client

File No. - N° du dossier

CCC No./N° CCC - FMS No/ N° VME

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### **7.34 Care, Custody and Control**

**Refer to Annex "H" and Supplemental General Conditions 1029 (2010-08-16) Ship Repairs Article 09 Where Vessel Out of Commission.**

### **7.35 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.

Solicitation No. - N° de l'invitation

F3084-13N158/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

018md

Client Ref. No. - N° de réf. du client

File No. - N° du dossier

CCC No./N° CCC - FMS No/ N° VME

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## **ANNEX A**

### **Technical Specification**

**CCGS Frederick G. Creed**

### **WINTER STORAGE SPECIFICATIONS**

**Winter 2013-2014**

**ANNEX B****BASIS OF PAYMENT PRICE**

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

**B1 Contract Firm Price**

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

**B2 Unscheduled Work**

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

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

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

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

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

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

**Pro-rated Prices Unscheduled Work**

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

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**B3 Overtime**

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

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

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

For Double time                           \$ \_\_\_\_\_ per hour

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



## 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 Environment Canada and Public Works and Government Services Canada for any and all loss of or damage to the vessel, however caused.
  - c. Notice of Cancellation: The Insurer will endeavour 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.

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

(h) Notice of Cancellation: The Insurer will endeavour 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 120 hours): To protect the Contractor for liabilities arising from damages caused by accidental pollution incidents.

## ANNEX D

### WARRANTY

#### Warranty Procedures

##### 1. Scope

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

##### 2. Reporting Failures With Warranty Potential

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

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

##### 3. Procedures

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

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

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

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

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

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

c. When a warranty defect claim is disputed by the Contractor, the Technical Authority may arrange to correct the defect by in-house resources or by contracting the work out. All associated costs must be

tracked and recorded as a possible charge against the contractor by PWGSC action. Material costs and manhours expended in correcting the defect are to be recorded and entered in Section 5 of the warranty defect claim by the Technical Authority who will forward the warranty defect claim to the PWGSC Contracting Authority for action. Defective parts of equipment are to be retained pending settlement of claim.

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

#### **4. Liability**

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

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

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

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

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

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

#### **5. Alongside Period For Warranty Repairs and Checks**

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

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 365 days and multiplied by the number of days remaining in the 365 days warranty period. The resultant would represent the 'Dollar Credit' due to Canada from the Contractor."

c. The Underwater paint system, before expiration of the warranty, should be checked by divers. The Technical Authority is to arrange the inspection and ensure that a representative of the Contractor will attend. The Technical Authority will inform the Contracting Authority of any adverse results.

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**Public Works and Government  
Services Canada**

**Travaux publics et Services  
gouvernementaux Canada**

## Warranty Claim Réclamation De Garantie

Vessel Name – Nom de navire	File No. – N° de dossier	Contract No. - N ° de contrat				
Customer Department – Ministère client		Warranty Claim Serial No. Numéro de série de réclamation de garantie				
Contractor – Entrepreneur		<b>Effect on Vessel Operations</b> <b>Effet sur des opérations de navire</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Critical Critique</td> <td style="text-align: center;">Degraded Dégradé</td> <td style="text-align: center;">Operational Opérationnel</td> <td style="text-align: center;">Non-operational Non-opérationnel</td> </tr> </table>	Critical Critique	Degraded Dégradé	Operational Opérationnel	Non-operational Non-opérationnel
Critical Critique	Degraded Dégradé	Operational Opérationnel	Non-operational Non-opérationnel			

### 1. Description of Complaint – Description de plainte

Contact Information – l'information de contact	
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">Name – Nom</div> <div style="width: 45%;">Tel. No. - N ° Tél</div> </div>	<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;">Signature – Signature</div> <div style="width: 35%;">Date</div> </div>

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

### 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

Client Name and Signature - Nom et signature de client

Date

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

Signature – Signature

Date

## ANNEX E

### PROCEDURE FOR PROCESSING UNSCHEDULED WORK

#### 1. Purpose

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

- a. To establish a uniform method of dealing with requests for Unscheduled Work;
- b. To obtain the necessary Technical Authority approval and Contracting Authority authorization before Unscheduled Work commences;
- c. To provide a means of maintaining a record of Unscheduled Work requirements including Serial Numbers, dates, and accumulated cost. The Contractor shall have a cost accounting system that is capable of assigning job numbers for each Unscheduled Work requirement so that each requirement can be audited individually.

#### 2. Definitions

- a. An Unscheduled Work Procedure is a contractual procedure whereby changes to the scope of Work under the Contract may be defined, priced and contractually agreed to. Such changes may arise from;
  - i. "Work Arising" from opening up of machinery and/or surveys of equipment and material, or
  - ii. "New Work" not initially specified but required on the Vessel.
- b. The procedure does not allow for the correction of deficiencies in the Contractor's Bid.
- c. No unscheduled work may be undertaken by the Contractor without written authorization of the Contracting Authority except under emergency circumstances described in Sub. Paragraph 3(b). Unscheduled Work
- d. Work undertaken without written Contracting Authority authorization will be considered the Contractor's responsibility and cost.
- e. The appropriate PWGSC form is the final summary of the definition of the Unscheduled Work requirement, and the costs negotiated and agreed to.

#### 3. Procedures

- a. The procedure involves the electronic form PWGSC 1379 for refit and repair and will be the only form for authorizing all Unscheduled Work.
- b. Emergency measures required to prevent loss or damage to the Vessel which would occur if this procedure were followed, shall be taken by the Contractor on its own authority. The responsibility for the cost of such measures shall be determined in accordance with the terms and conditions of the Contract.

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

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

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

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

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

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

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

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

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

k. In the event that the Technical Authority requires Unscheduled Work of an urgent nature or an impasse has occurred in negotiations, the commencement of the Unscheduled Work should not be unduly delayed and should be processed as follows, in either case. The Contractor will complete the appropriate PWGSC 1379 form indicating the offered cost and pass it to the Contracting Authority. If the Technical Authority wishes to proceed, the Technical Authority and the Contracting Authority will sign the completed PWGSC form with the notation, "CEILING PRICE SUBJECT TO DOWNWARD ADJUSTMENT", and allocate a Serial Number having the suffix "A". The work will proceed with the understanding that following an audit of the Contractor's actual costs for completing the described work, the cost will be finalized at the ceiling price or lower, if justified by the audit. A new PWGSC form will then be completed with the finalized costs, signed and issued with the same Serial Number without the suffix "A", and bearing a notation that this form is replacing and canceling the form having the same Serial Number with the suffix "A".

NOTE:



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PWGSC forms bearing Serial Numbers with a suffix "A" shall not to be included in any contract amendments, and therefore no payment shall be made until final resolution of the price and incorporation into the contract.

#### 4. Amendment to Contract or Formal Agreement

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

## ANNEX F

### QUALITY CONTROL/INSPECTION

#### F1 Quality Control Plan

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

The documents referenced in the QCP must be made available within two (2) working days when requested by the Inspection Authority.

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

#### F2 Inspection and Test Plan (ITP):

1. The Contractor must prepare an Inspection and Test Plan (ITP) comprising individual inspection and test plans for each specification item of this project, in accordance with the Quality Standard and its Quality Control Plan. The ITP must be submitted to the Inspection Authority for review and amended by the Contractor to the satisfaction of the Inspection Authority.

- a. Each ITP must contain all inspection points identified in the Specification highlighting any mandatory points that must be witnessed by the Inspection Authority and other "hold" points imposed by the Contractor to ensure the quality of the work.
- b. Milestone delivery date for the ITP is given in the Contract, however individual ITPs should be forwarded for review as developed.

2. Coding:

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

i. Prefixes for Inspections, Test and Trials:

- Prefix "1" is a Contractor inspection, i.e. 1H-10-01, 1H-10-02;
- prefix "2" is a Contractor post repair test, i.e. 2H-10-01; and
- prefix "3" is a Contractor post repair trial, i.e. 3H-10-01.

b. Specification items followed by assigned sequence numbers for inspection processes within each Specification Item; and

c. Cross reference to a verification document number

### F3 Inspection and Test Plan Criteria:

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

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

#### 4. Contractor Imposed Testing:

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

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

### F4 Conduct of Inspection

1. Inspections must be conducted in accordance with the ITP and as detailed in F4.
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.

## F5 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.

## F6 Inspection and Trials Process

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

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

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

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

#### **INSPECTION NON-CONFORMANCE REPORTS.**

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

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

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

#### **3. Inspection Non-conformance report**

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

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

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

#### **4. Tests, Trials, and Demonstrations**

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

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

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

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

- e. The Contractor must submit its Inspection and Test Plan as detailed in F2.
- f. The Contractor must co-ordinate each test, trial and demonstration with all interested parties, including the Inspection Authority; Contracting and Technical Authorities; regulatory authorities; Classification Society; Sub-contractors; etc. **The Contractor must provide the Inspection Authority and other Crown Authorities with a minimum of five (5) working days notice of each scheduled test, trial, or demonstration.**
- g. The Contractor must keep written records of all tests, trials, and demonstrations conducted as detailed in F5. The Contractor may utilize the **PWGSC STANDARD TESTS & TRIALS RECORD SHEETS** which can be customized by the Contractor to suit individual test or trial requirements. These Record Sheets are available from the Inspection Authority in digital format.
- h. The Contractor must in all respects be responsible for the conduct of all tests and trials in accordance with the requirements of the Contract.
- i. The Inspection Authority and the Technical Authority reserve the right to defer starting or continuing with any sea trials for any reasonable cause including but not limited to adverse weather, visibility, equipment failure or degradation, lack of qualified personnel and inadequate compliance with safety standards.

**ANNEX G****Financial Bid Presentation Sheet****G1 Price for Evaluation**

<b>A)</b>	<b>Known Work</b> For work as stated in Part 1 Clause 1.2, Specified in Annex "A" and detailed in the attached Pricing Data Sheets Appendix 1 of Annex "G", for a FIRM PRICE of:	\$
<b>B)</b>	<p>Unscheduled Work Contractor Labour Cost: Estimated labour hours at a firm Charge-out Labour Rate, including overhead and profit for evaluation purpose only: 100 person hours X \$_____ per hour for a PRICE of: See Article G2.1 and G2.2 below.</p> <p>Overtime premium for time and one half: Estimated hours for evaluation purposes only: 10 person hours X \$_____ per hour for a PRICE of: See Article G3 Below.</p> <p>Overtime premium for double time: Estimated hours for evaluation purposes only: 10 person hours X \$_____ per hour for a PRICE of: See Article G3 below.</p>	<p>\$</p> <p>\$</p> <p>\$</p>
<b>C)</b>	<p>Vessel Transfer Cost as Per Clause G5</p> <p>Proposed shipyard / ship repair facility: _____</p>	\$
<b>D)</b>	<p>EVALUATION PRICE Taxes Excluded,</p> <p>[A + B + C]</p> <p>For an EVALUATION PRICE of (applicable taxes excluded):</p>	\$

## G2      **Unscheduled Work**

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

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

**G2.1:** Notwithstanding definitions or usage elsewhere in this document, or in the Contractor's Cost Management System, when negotiating Hours for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package.

Elements of Related Labour Costs identified in G2.2 below, will not be negotiated, but will be compensated for in accordance with Note G2.2. It is therefore incumbent upon the bidder to have bid appropriately which will result in fair compensation, regardless of their Cost Management System.

**G2.2:** Allowance for Related Labour Costs such as: Management, all Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Certification Inspecting and Reporting, and Estimating and preparing unscheduled work Submissions will be included as Overhead for the purposes of determining the Charge-out Labour Rate entered in line G2 above.

**G2.3:** 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.

## G3      **Overtime**

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

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

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

For Double time                                \$ \_\_\_\_\_ per hour

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



#### **G4 Vessel, Refit, Repair or Docking Cost**

The following costs must be included in the price:

1. Ship Services: include all costs for ship services such as water, steam, electricity, etc., required for vessel maintenance for the duration of the Contract.
2. Docking and Undocking include:
  - (a) all costs resulting from drydocking, wharfage, security, shoring, shifting and/or moving of the vessel within the successful Bidder's facility;
  - (b) the cost of services to tie up the vessel alongside and to cast off.

Unless specified otherwise, the vessel will be delivered by Canada to the successful Bidder's facility alongside a mutually agreed safe transfer point, afloat and upright, and the successful Bidder will do the same when the Work is completed. The cost of services to tie up the vessel alongside and to cast off must be included in the evaluation price.

3. Field Service Representatives/Supervisory Services: include all costs for field service representatives/supervisory services including manufacturers' representatives, engineers, etc.

These services must not be an extra charge except where unscheduled work requiring these services is added to the Contract.

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.

## G5 Vessel Transfer Costs

1. The evaluation price must include the cost for transferring the vessel from its home port to the shipyard/ship repair facility where the Work will be performed and the cost of transferring the vessel to its home port following completion of the Work, in accordance with the following:

(a) The Bidder must provide the location of the shipyard/ship repair facility where it proposes to perform the Work together with the applicable vessel transfer cost from the list provided under paragraph 2 of this clause shall be entered into Table G1:

(b) If the list in paragraph 2 of this clause does not provide the shipyard/ship repair location where the Bidder intends to perform the Work, then the Bidder must advise the Contracting Authority, in writing, at least 5 calendar days before the bid closing date, of its proposed location for performing the Work. The Contracting Authority will confirm to the Bidder, in writing, at least 5 calendar days before the bid closing date, the location of the shipyard/ship repair and the applicable vessel transfer cost.

A bid that specifies a location for executing the Work which is not on the list of paragraph 2 of this clause, and for which a notification in writing has not been received by the Contracting Authority as required above, will be considered non-responsive.

### 2. List of shipyard/ship repair facilities and applicable vessel transfer costs

Vessel: CCGS Frederick G. Creed  
Home port: Rimouski, Quebec

Transfer costs in the case of vessels transferred using a government delivery crew include the fuel cost at the vessel's most economical speed of transit and for unmanned refits only, crew transportation costs for the delivery crew based on the location of the vessel's home port and the shipyard/ship repair facility. Crew transportation costs do not include any members of the delivery crew who remain at the shipyard/ship repair facility in order to discharge project responsibilities related to the vessel being transferred.

Transfer costs in the case of vessels transferred unmanned by either commercial towing, railway, highway or other suitable means of transportation must be:

(i) included as part of the Bidder's financial bid in the case where the Bidder is responsible for the transfer; or

(iii) identified as the applicable vessel transfer cost, as given in the list below, in the case when Canada is responsible for the transfer.

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**Shipyard/ship repair facility**

**Applicable vessel transfer cost**

<b>Company</b>	<b>City</b>	<b>Transfer Cost UnManned</b>
Chantier Davie Canada Inc.	Lévis, Québec	C\$5,891.00
Méridien Maritime	Matane, Québec	C\$4,521.00
Chantier Naval Forillon	Gaspé, Qc	C\$6,818.00
Ocean Industries	Isle-aux-Coudres QC	C\$2,301.00
Verreault Navigation Inc.	Les Méchins QC	C\$5,845.00

**Proposed Drydocking Location :** \_\_\_\_\_

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**ANNEX G - PRICING DATA SHEETS APPENDIX 1**

Ref #	Spec #	Description	Total Hours	Total Labour Cost	Total Material Cost	Total FSR& Sub- Contract ors Cost	Total Firm Price	Unit Cost
H.D. -1		<b>Towage, Blocking and Refloating</b>		\$	\$	\$	\$	
H.D. -2		<b>SERVICES</b>		\$	\$	\$	\$	
	2.1	Unit Rate / KW - Hr.						\$
	2.3	Unit Rate / Alarm Response						\$
	2.5	Unit Rate / Hr. For crane						\$
H.D. -3		<b>INSPECTION AND ADDITIONAL WORK</b>		\$	\$	\$	\$	
H.D. -4		<b>MISCELLANEOUS WORK</b>		\$	\$	\$	\$	
	4.3	Unit Rate / Anode						\$
		<b>TOTAL</b>		\$	\$	\$	\$	

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**ANNEX H****VESSEL CUSTODY****H1 Vessel Custody**

1. This work is going to take place with the vessel "out of commission" and therefore in the "care, control and custody" of the Contractor.
2. An "ACCEPTANCE CERTIFICATE - ASSUMPTION OF CUSTODY OF FEDERAL GOVERNMENT SHIPS BY SHIPYARDS" (attached as Appendix 1 to this Annex "H") shall be completed as required and a copy passed to the INSPECTION AUTHORITY.
3. To facilitate this turnover, representatives of the Contractor and Canada shall confirm the condition of the vessel.
4. A vessel condition report shall be appended to the above noted certificate and shall be accompanied by colour photographs or videos in either conventional or digital format.
5. When the vessel is to be returned to the "care, control and custody" of Canada, an "ACCEPTANCE CERTIFICATE - RESUMPTION OF CUSTODY OF FEDERAL GOVERNMENT SHIPS BY THE CLIENT DEPARTMENT" (Attached as appendix 2 to this Annex H) shall be completed and a signed copy passed to Canada for distribution.

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## ANNEX H - APPENDIX 1

### ACCEPTANCE CERTIFICATE

#### ASSUMPTION OF CUSTODY OF CANADIAN GOVERNMENT SHIPS BY CONTRACTORS

ACCEPTANCE OF \_\_\_\_\_

1. The undersigned, on behalf of the Department of Canadian Coast Guard and of \_\_\_\_\_ acknowledge to have handed over and received respectively CCGS \_\_\_\_\_ for the purpose of refit, all in accordance with the terms and conditions of PWGSC Contract Serial Number \_\_\_\_\_ and such documents which form part of the said contract.

2. It is mutually agreed by all parties that the condition report by compartment or area shall be considered as an addendum to this agreement; and shall be a valid document in the taking over of the vessel by the Contractor, even if the inspection and signing occur after the signing of the agreement but within the agreed ten (10) day period.

SIGNED AT \_\_\_\_\_ PROVINCE \_\_\_\_\_ ON,

THE \_\_\_\_\_ DAY OF \_\_\_\_\_ (Month) 2013.

AT \_\_\_\_\_ HOURS.

FOR: \_\_\_\_\_  
(CONTRACTOR)

FOR: \_\_\_\_\_  
Department of Canadian Coast Guard

WITNESSED BY: \_\_\_\_\_  
PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

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018md

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## ANNEX H - APPENDIX 2

### ACCEPTANCE CERTIFICATE

#### RESUMPTION OF CUSTODY OF CANADIAN GOVERNMENT SHIPS BY SHIPYARDS

#### ACCEPTANCE OF CCGS \_\_\_\_\_

1. The undersigned, on behalf of \_\_\_\_\_ and of the Department of Canadian Coast Guard, acknowledge to have handed over and to have received respectively the CCGS \_\_\_\_\_, said vessel having been received By \_\_\_\_\_ on \_\_\_\_\_ (date), for the purpose of refit in accordance with the terms and conditions of PWGSC Contract Serial Number \_\_\_\_\_.
2. It is mutually agreed by all parties that the liabilities and responsibilities of \_\_\_\_\_, as defined in Article 9 of PWGSC 1029 Supplemental General Conditions for Ship Repairs, for a vessel out of commission, shall automatically cease as at \_\_\_\_\_ hours on \_\_\_\_\_ (date).
3. That effective from \_\_\_\_\_ hours on the \_\_\_\_\_ (date) Article 8 of PWGSC 1029 for a vessel "in commission" Shall apply, and that responsibility for the care and protection of the said vessel shall revert to Canada.

SIGNED AT \_\_\_\_\_ PROVINCE \_\_\_\_\_ ON,

THE \_\_\_\_\_ DAY OF \_\_\_\_\_ (Month) 2014.

AT \_\_\_\_\_ HOURS.

FOR: \_\_\_\_\_  
(CONTRACTOR)

FOR: \_\_\_\_\_  
Department of Canadian Coast Guard

WITNESSED BY: \_\_\_\_\_  
PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

## ANNEX I DELIVERABLES/CERTIFICATIONS

### I1 Mandatory Tender Deliverables Check List

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

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

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

Item	Description	Completed and Attached
1	Invitation To Tender document part 1 page 1 completed and signed;	
2	Completed Annex "G" Financial Bid Presentation Sheet", clauses G1 through G5;	
3	Completed Pricing Data Sheets, per clause 3.1 Section II, Annex "G", Appendix 1;	
4	Completed Annex "I1" Deliverables/Certifications;	
5	Changes to Applicable Laws (if any), as per clause 2.4	
6	Vessel Transfer Cost, as per clause 6.1 and Annex "G"	
7	Docking Facility Certificate, as per clause 6.2	
8	Proof of good standing with Worker's Compensation Board, as per clause 6.3	
9	Proof of valid Labor Agreement or similar instrument covering the work period, as per clause 6.4	
10	Preliminary Work Schedule , per clause 6.5;	
11	If Registered its Valid ISO 9001-2008 Certification, as per clause 6.6	
12	Insurance Requirements, as per clause 6.8	
13	Proof of welding certification, as per clause 6.9	
14	List of subcontractors, as per clause 6.10	
15	Example of its Quality Control Plan, as per clause 6.11	
16	Example of an Inspection and Test Plan as per clause 6.12	
17	Details of Environmental Emergency Response Plan, Details of Formal Environmental Training as per Clause 6.13	



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## I2 Deliverables after Contract Award

Item	Description	Reference	Due By
1	Insurance requirements as per Annex "C"	Clause 7.10 and Annex "C"	10 Working Days after contract award
3	Revised Work Schedule	Clause 7.13	5 calendar days after contract award
4	The Contractor's Quality Control Plan	Clause 7.17	5 calendar days after contract award

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## ANNEX J

## List of Directors

[illegible]

**CCGS FREDERICK G. Creed**

**Order no. F3084-13N158**

**"Winter storage specifications"**

**Appendix A**

**Winter 2013-2014**

Jean-Pierre Munger  
Project Officer  
Vessel Support - Refits  
Technical Services Branch

October 1, 2013

## Index

H.D.-1 TOWAGE, BLOCKING AND REFLOATING

H.D.-2 SERVICES

H.D.-3 INSPECTIONS AND ADDITIONAL WORK

H.D.-4 MISCELLANEOUS WORK

Attached plans:

176-DCK\_2 Docking plan

65-B1 Construction profile

## VESSEL CHARACTERISTICS

Type:	SWATH
Construction:	Aluminium
Length overall:	20.42 meters
Width at midship beam:	9.45 meters
Maximum draft:	2.74 meters
Maximum displacement:	70 tonnes

## STATEMENT OF REQUIREMENTS

### H.D.-1 TOWAGE, BLOCKING AND REFLOATING

HD.-1.1 The shipyard shall provide the labour, materials and equipment required for blocking and towing the vessel on or around November 12, 2013, as well as for dry-docking.

HD.-1.2 Ensure depth sounder or transducer plates on the port and starboard hull are not against the keel blocks.

H.D.-1.3 The vessel shall be stored in the shipyard in a way that it can be launched around April 20, 2014 (to be confirmed), ice conditions permitting. The contractor shall provide a location at a secure dock after the vessel is launched so that the crew may conduct inspections and tests, obtain certifications and make the vessel operational.

### H.D.-2 SERVICES

H.D.-2 .1 Provide the equipment and labour to connect and disconnect a 220 VAC, single-phase 100 A-capacity power supply. The vessel's wire length is 200 feet. Provide a price for an estimated total power consumption of 10,000 kWh. The electricity costs will be increased or decreased on form DSS 1379.

- For the entire duration of the vessel's winter storage, the vessel (accommodations, the two (2) engine rooms and wheelhouse) shall be heated according to the CCG's requirements. Provide and install a walkway with a safety net for the entire winter storage period.

H.D.-2.2 The contractor shall be responsible for the vessel while it is in winter storage. The shipyard shall authorize the CCG and certain contractors to work onboard the vessel while it is in winter storage. This includes, among others:

- Two (2) CCG mechanics who will carry out maintenance and repairs, and
- DFO electronic technicians.

H.D.-2.3 The shipyard shall be responsible for conducting daily onboard security rounds at the end of the day for the entire dry-dock period in addition to responding to surveillance system alarms. The contractor shall provide a report to the corresponding CCG employee for each alarm response and may claim compensation at the submitted rate, which will be negotiated on a 1379 form at the end of the contract.

H.D.-2.4 Provide an hourly rate, should the CCG want to proceed with certain work.

H.D.-2.5 Provide an hourly rate for crane use, including all required personnel, to transfer parts onboard the ship for the CCG's use. Include ten (10) hours in the contract.

H.D.-2.6 Provide snow-removal services so that CCG staff and various contractors continue to have access to the vessel.

H.D.-2.7 Install a non-pressurized fire hose that is still ready to use at all times with the necessary hose lengths.

H.D.-2.8 Provide a sanitary container placed near the vessel for waste from the vessel and empty it as needed during the dry-dock period.

H.D.-2.9 Provide and install piping under the vessel to collect waste water.

H.D.-2.10 Provide handling and manœuvring services to unload the winch and gantry from the vessel and provide a safe location to store them during the vessel's winter storage.

H.D.-2.11 Provide parking for staff working onboard the vessel while it is in winter storage.

#### H.D.-3 INSPECTION AND ADDITIONAL WORK

All additional work not described in these specifications shall be negotiated on form PWGSC 1379. The work description will be prepared by the CCG representative, and negotiations will then take place with the PWGSC inspector in order to obtain a reasonable fixed price before the work begins.

#### H.D.-4 MISCELLANEOUS WORK

#### H.D.-4.1 Vessel cleaning

Once the vessel is out of the water, clean the lower hull, rudders and canards using water jets from pressure washing machine.

#### H.D.-4.2 Sea suction

Remove sea suction screens, clean cavities, inspect and change anodes if needed\* and return screens.

#### H.D.-4.3 Anodes

Inspect anodes. Provide a price list (Ref. LIST OF ANODE CCGS FREDERICK G. CREED). Put back screens in place.

#### H.D.-4.4 Accommodations floor

Replace all floor coverings (tiles) in the accommodations sections except in the rooms. Remove existing tiles and clean deck plates in preparation for the new floor covering. Install new floor covering. The required covering (about 450 ft<sup>2</sup>) will be included on a 1379 form, according to the applicable rule.

#### H.D.-4.5 Replace a hydraulic control valve on the winch.

#### H.D.-4.6 Fire extinguishing systems

Hire a certified company to certify the vessel's fire extinguishing systems.

#### H.D.-4.7 Liferafts

Unload the two liferafts and send them to a certified firm for annual recertification. Load the two liferafts back onto the vessel when it is operational again.

#### H.D.4.8 Two (2) aluminum water tanks

Remove the drain plug and drain the water tank, open the covers of manholes. To clean tanks with alkaline cleaner, International 950, GMA570, biodegradable using a pressure washer freshwater Karcher type, followed by a thorough rinse before proceeding further, thoroughly clean the tanks of waste that will be transported off the ship by the shipyard.

Obtain a certificate from a chemist for entering the tanks.

#### **H.D.4.8.1 Identification**

The Contractor shall remove the existing coating ( Interline 925 with solvent) completely cleaning to bare metal to the surface preparation standard specified herein, in the two potable water tanks (Port and Stbd. 3.206 m<sup>3</sup> capacity each) and recoat with Interline 975P, a high performance, 100% solid, no VOCs epoxy based coating. Prior to re-commissioning the potable water system the tanks are to be super chlorinated, flushed, filled, and tested in accordance with this Specification.

#### **H.D.4.8.2 Reference**

1. The following documents are applicable to, or interface with, the task requirements of this section:

- Guidelines for Canadian Drinking Water Quality;
- Potable Water Quality, Section 7.A.12 Canadian Coast Guard Fleet Safety Manual;
- Drqawing #65-B1 Construction profile
- .

### ***H.D.4.8.3* Technical**

#### **H.D.4.8.3.1 Decommissioning of Potable Water Tanks**

The potable water system shall be isolated with a lock-out system to prevent ingress of any contaminants including water into the piping system and tanks while the work of this Section of the specification is being carried out. All openings to be plugged to ensure contaminants (sandblast grit etc.) do not enter the piping system.

The contractor shall open all manholes from each Fresh Water tank.

The Contractor shall remove all water from the two (2) potable water tanks. The Contractor shall be responsible for disposal of all water removed from the tanks.

Before commencing work, the Contractor shall turn off heater.

The Contractor shall remove all sensors, suction pipes and drains fitted in the tanks to prevent damage. These shall be stored away from the work and protected for reinstallation.

The Contractor shall protect the accommodation and machinery compartments from damage by any dirt, abrasive grit, and other possible material and the Contractor shall develop and present to the CCG TA a dust control plan. Vapors, dust, dirt, etc., shall not be allowed to enter the machinery space, accommodation spaces, or other spaces throughout the vessel.

#### **H.D.4.8.3.2 Removal of Existing Potable Water Tank Coating**

The Contractor shall completely remove the existing coatings from all internal surfaces of the potable water tanks, bringing them to 100% bare metal to the surface preparation standard specified herein. It is noted that there are VOCs presently leaching into the potable water in the tanks and it is possible that there will be contamination of the removed coating by the source of these VOCs. The Contractor shall be responsible for the disposal ashore of the removed material in accordance with applicable regulations. The Contractor is to provide the CCG TA with a disposal certificate for the removed material.

#### **H.D.4.8.3.3 Surface Preparation of Potable Water Tanks**

The Contractor shall provide the services of a Factory Service Representative (FSR) from the coating supplier and/or manufacturer to ensure all surface preparations within the tanks are in accordance with the coating manufacturer's requirements.



The Contractor shall prepare the internal surfaces of the potable water tanks to fully comply with the epoxy coating manufacturer's requirements and a white metal blast, to SSPC-SP5 standard.

To improve adhesion, the Contractor shall wash down the steel surfaces with a product to remove both ferrous salts and organic contaminants before applying any coating. The Contractor shall discuss with the FSR to confirm the appropriate product to use for the wash and any subsequent rinse in preparation for painting.

The Contractor shall ensure that all grit and debris is removed from tanks and the vessel and disposed of ashore.

The Contractor shall be responsible for maintaining atmosphere required by the manufacturer's requirements with respect to temperature and humidity within the tanks after final surface preparation and before the application of the coating system.

The Contractor shall provide each tank with a mechanical ventilation system vented to the outside of the ship. Good and effective ventilation must be provided and any blowers/extractors shall ensure good and effective air movement and solvent vapour removal from the lowest point in the tank. Vapour, dust, dirt, etc. shall not be allowed to enter the machinery or other space of the vessel and must be directed by flexible ducting to the outside of the vessel.

Where required by the coating system supplier's representative, the Contractor shall re-work the surface preparation to meet the coating system manufacturer's requirements at no cost to Canada.

#### **H.D.4.8.3.3.4 Application of Epoxy Potable Water Tank Coating**

The Contractor is responsible to use clean hoses, clean spray gun, new brushes and new equipment for completion of this specification.

The Contractor shall ensure all people entering to the tanks for any purpose after the tank have been cleaned and during the coating application are not to introduce any contaminant into the tanks. All people must wear suitable clean, new, non-contaminating protective clothing, including on their feet.

The Contractor shall, upon approval of the surface preparation of the potable water tanks by FSR, apply Interline 975P, a high performance, **solvent free**, epoxy coating system specifically designed for and approved for potable water tanks.

The Contractor shall apply the epoxy coating system according to the requirements of the coating system supplier and/or manufacturer. The Contractor shall provide the services and documents of a FSR from the coating manufacturer to monitor the coating application process. The Contractor shall start the application process by “striping” all weld seams, flanges, limber holes and edges by brush. If there are crevices in the weld areas, such as caused by intermittent-welding, the Contractor shall consult with the FSR to determine if there are additional preparations to be made prior to coating the affected areas and will advise the CCG TA of the FSR recommendations.

The Contractor shall be responsible to ensure all critical elements, such as measures to prevent contamination, temperature and humidity are controlled to the specifications required by the coating system manufacturer during the curing process of the coating.

Any deviations from coating system manufacturer’s requirements which requires re-work or additional work on the part of the Contractor as a result of not adhering to the coating system manufacturer’s requirements shall be the responsibility of the Contractor.

The Contractor shall provide the CCG TA with a complete report detailing the application and curing atmospheric and temperature conditions and final thickness of the tank coatings. A minimum of fifty (50) dry film thickness readings shall be taken for each of the two tanks. The report shall detail where on the structure the readings were taken.

#### **H.D.4.8.3.3.5 Post-Coating Application Potable Water Tank Inspections**

The Contractor shall provide the services of a FSR from the coating system manufacturer to inspect and verify the final coating condition of each of the two potable water tanks.

The Contractor shall provide the CCG TA with a final report from the coating system manufacturer’s representative detailing the findings of his inspection.

Noted deficiencies shall be rectified by the Contractor prior to closing of the tanks.

#### **H.D.4.8.3.3.6 Fill and Flush of Potable Water Tanks**

The Contractor shall reinstall water heater into the tank with original position.

The Contractor shall reinstall the all sensors, suction pipes and drains in the tanks to their original positions and shall prove them operational. If any paint is disturbed in the reinstallation of components, the disturbed paint is to be touched up in accordance with instructions from the FSR.

Any material introduced into the tank is to be new, contractor supplied material unless otherwise specified and certified for use in a potable water system.

Following final acceptance of the tank coating, the Contractor shall use new fiber reinforced neoprene gasket material approved for fresh water holding tanks to seal the manhole covers of the tanks.

The Contractor shall flush the tanks once and refill with fresh water, then super chlorinate (disinfect) the tanks as per procedure set out in the Fleet Safety Manual 7.F.12 Potable Water Quality, Section 3.5 Disinfection. All taps throughout the vessel shall be turned on to supply super chlorinated water to all piping. The super chlorinated water shall stand for a minimum of four hours. Super chlorination is achieved by adding unscented bleach @ 5% sodium hypochlorite at a volume of 1 litre / cubic meter of water in the tank. The Contractor is to dispose of the super chlorinated water in the tank in accordance with the latest provincial regulations. The Contractor is to fill the tanks once to flush the tanks of super chlorinated water. Further to this, the Contractor shall perform a total of 4 fills and 3 flushes to rid the tanks and system of super chlorinated water.

The Contractor shall be responsible for the disposal of all water used for the filling/flushing and super-chlorination of the potable water tanks.

#### **H.D.4.8.3.7 Testing**

Upon completion of the super chlorination and flush procedure the contractor shall fill the tank with potable water and chlorinate to a standard level of 0.2 – 0.5 mg/litre which is achieved by dosing the tanks with unscented bleach at a rate of 2 litres / 100 cubic meters. The Contractor shall first take a sample of the shore water supply and send to an independent laboratory (as defined below) for testing, the twenty eight (28) testing parameters shall follow the testing parameters set out in the Fleet Safety Manual 7.F.12 Potable Water Quality.

The Contractor shall leave each tank undisturbed for the period water samples are to be taken. After 24 hours, 48 hour and 72 hour the Contractor is to take water samples from each tank for water quality analysis. These tests shall measure the twenty eight parameters set out in the Fleet Safety Manual 7.F.12 Potable Water Quality.

After 72 hours, the ships potable water distribution system shall be completely filled with water from Port and Stbd Fresh Water tanks. The contractor shall take samples from the furthest point away from the tanks, as well as the galley, laundry room and two crew members cabins after 30 minutes of running the water. These tests shall measure the twenty eight (28) parameters set out in the Fleet Safety Manual 7.F.12 Potable Water Quality.

The Contractor shall send all water samples collected in accordance with this section for testing to an independent laboratory that is a Standards Council of Canada/Canadian Association for Environmental Analytical Laboratories (SCC/CAEAL) accredited facility. The Contractor shall provide proof of the Laboratory's accreditation to the CCG TA.

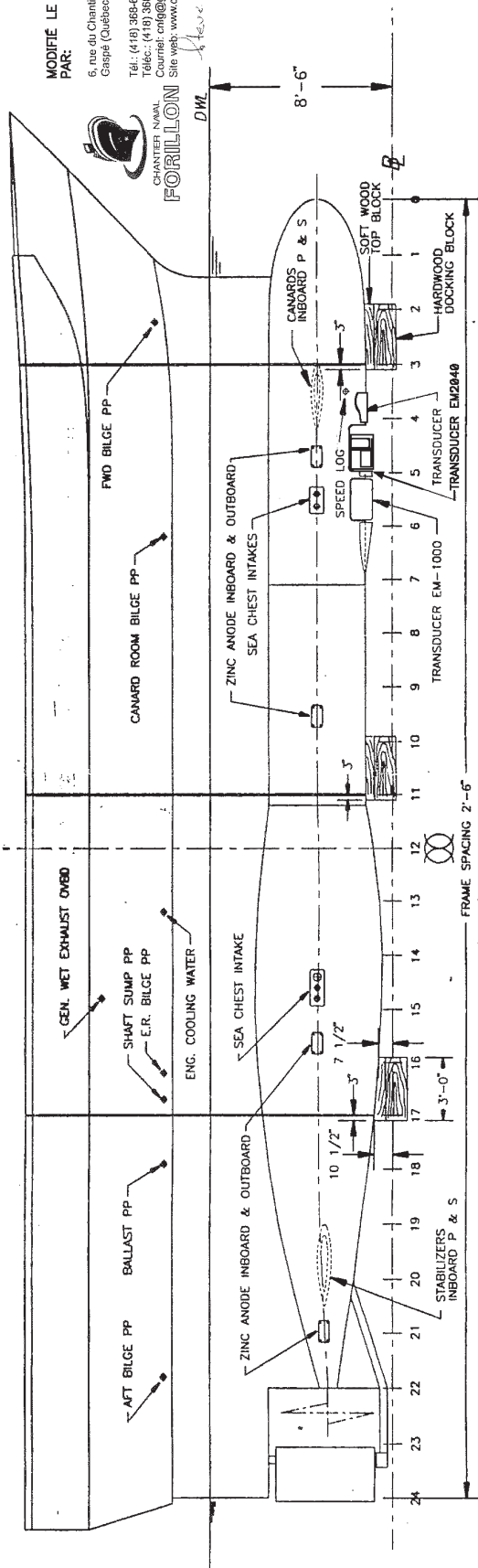
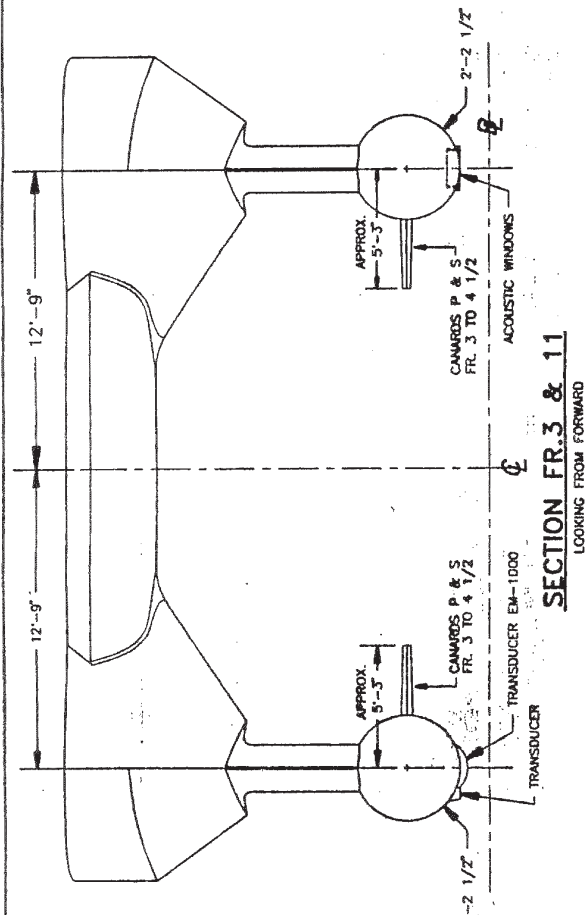
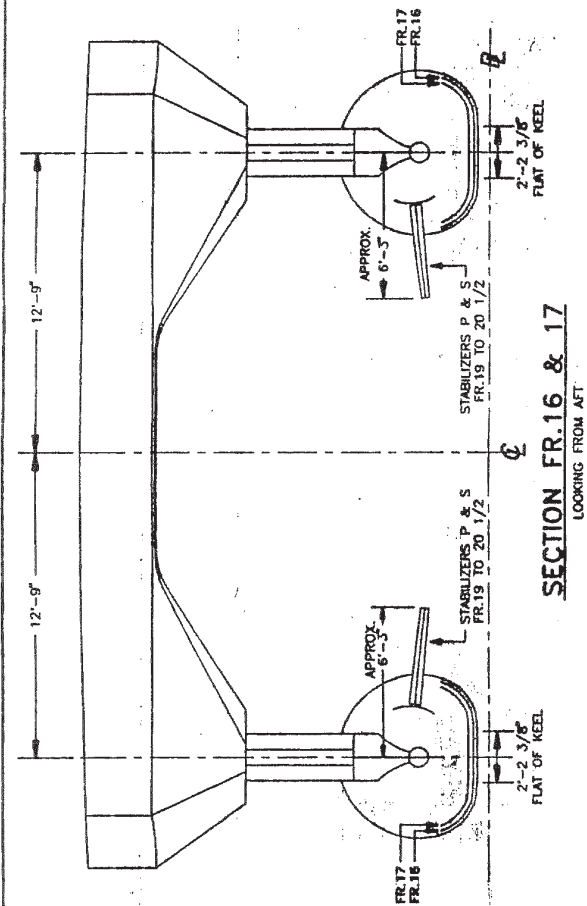
The water samples shall be tested based on the Canadian Drinking Water Quality Guidelines (CDWQG). Additionally, the samples shall be tested for microbiological and/or chemical contaminants, especially for VOC's (Volatile Organic Compounds) such as ethyl benzene, toluene and xylene which may be present due to improperly cured tank coatings. The potable water shall be tested to measure the twenty eight parameters (28) set out in the Fleet Safety Manual 7.A.12, section 3.6 g. and total hydrocarbons. Documentation of these sample analyses shall be provided to the CCG TA.

The Contractor shall be responsible to rectify any deficiencies based on the water sample analysis to provide the CCG with a certified potable water system that is capable of providing potable water safe for human consumption.

#### **H.D.4.8.3.8 Documentation**

The Contractor shall provide the CCG TA all test results.

The contractor shall provide the CCG TA a full inspection report and documentation from the paint manufacturer's FSR of surface preparation and painting throughout the process.



MODIFIÉ LE 15 MAI 2013  
 PAR:  
 6, rue du Chantier maritime, C.P. 8023  
 Gaspé (Québec) Canada G4X 2R6  
 Tél.: (418) 368-6036  
 Téléc.: (418) 368-3968  
 Courriel: [cnig@shiprotter.net](mailto:cnig@shiprotter.net)  
 Site web: [www.chantier-naval.com](http://www.chantier-naval.com)  
*Have Gynon*

C. TREMBLAY & ASSOCIATES INC. CONSULTANTS MARITIMES 3157 DOUAI, STE-FOY, QUE., CANADA, G1W 2X3	TITRE:  FREDERICK G. CREED DOCKING PLAN	DESSINE PAR: L.T.	DATE: 96-02-18	PROJET NO: 176	ECHELLE: 3/16"=1'-0"	FILE: 1 / 2
		VERIFIE PAR: C.T.	DATE:	PLAN NO: 176-DCK	REVISION: 1	

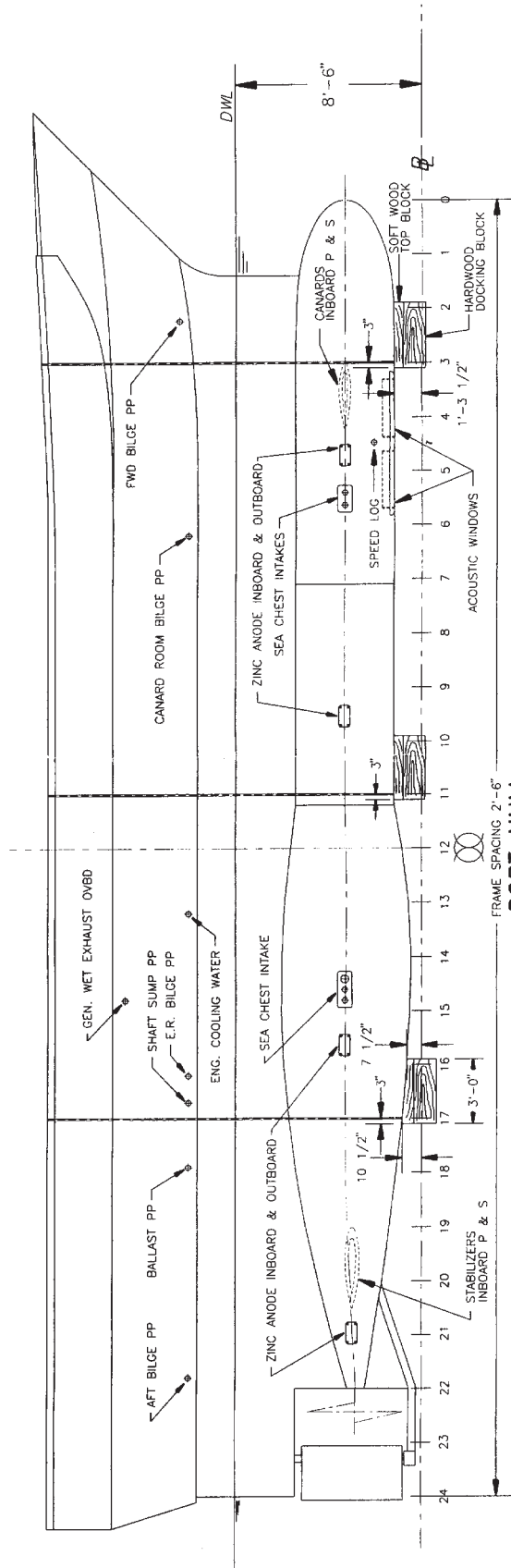


IMPORTANT NOTICE


TO PREVENT HULL DAMAGE, ALWAYS  
USE SOFT WOOD TOP BLOCK OR  
ANOTHER RESILIENT MATERIAL.

PRINCIPAL PARTICULARS

LENGTH OVERALL: 65'-7 1/2"  
BREADTH: 35'-0"  
DEPTH: 15'-7"  
DESIGN DRAFT: 8'-6"  
LIGHTSHIP WEIGHT: 60.8 L.Tons



PORT HULL

	C. TREMBLAY & ASSOCIATES INC. CONSULTANTS MARITIMES 3157 DOUAI, STE-FOY, QUE., CANADA, G1W 2X3	TITRE: FREDERICK G. CREED DOCKING PLAN		DESIGNE PAR: L.T.	DATE: 96-02-18	PROJET NO: 176	ECHELLE: 3/16" = 1'-0"		FLE: 2 / 2
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1.04	65' - 7' 1/2"
LBH	56' - 6"
MEAN	35' - 0"
DEPTH	15' - 7"





# Fleet Safety Manual

## 7.A.12 - POTABLE WATER QUALITY

### 1 PURPOSE

- a) To ensure that potable water supplied at CCG Facilities and aboard Canadian Coast Guard (CCG) vessels for drinking or food preparation meets the Guidelines for Canadian Drinking Water Quality
- b) This procedure applies to the drinking water produced, purchased in bulk, stored and distributed at CCG facilities and aboard CCG vessels.

### 2 RESPONSIBILITIES

#### 2.1 REGIONAL DIRECTOR, FLEET OR DELEGATE

- a) The Regional Director, Fleet or Delegate shall ensure that information pertaining to the quality of water at specific locations where the vessel intends to load potable water is available.

#### 2.2 COMMANDING OFFICER

- a) The Commanding Officer shall ensure that potable water taken aboard the vessel, or manufactured aboard is tested on a regular basis to ensure that water quality meets the standards prescribed in the Guidelines for Canadian Drinking Water Quality.
- b) The Commanding Officer shall ensure that all documents concerning potable water quality are adequately completed, checked, and maintained aboard.
- c) The Commanding Officer shall ensure that water obtained for the vessel from hydrants or fill stations is water that is provided by a recognized drinking water system.

#### 2.3 CHIEF ENGINEER

- a) The Chief Engineer is to ensure that fitted water production and purification equipment is maintained to the manufacturer's standard and that potable water tanks are inspected.
- b) The Chief Engineer, or their delegate, is to ensure that all maintenance performed on the potable water system is logged and that only approved parts and "potable water" coatings are properly applied and used.



## **2.4 REGIONAL OPERATIONS CENTRE (ROC)**

- a) The ROC is the emergency contact point for laboratories reporting contamination in vessel/station test water samples. The ROC shall immediately notify the vessel/station of any report of contamination so that they can take the appropriate measures to discontinue use and to flush tanks.

## **3 INSTRUCTION**

### **3.1 GENERAL**

- a) All faucets accessible to the vessel/station complement that are not connected to a supply of potable water are to be clearly marked to indicate that the water provided from that faucet is not suitable for drinking or food preparation.
- b) To ensure potable water safety in empty cabins or seldom-used spaces, Site Specific Work Instructions or MAINTelligence tasks shall:
  - Ensure that on a weekly basis these areas are visited and potable water fixtures are flushed. Appropriate signage is placed above the potable water source and reference is made in the site specific orientation instructions to the effect that the taps shall be flushed by new occupant of the cabin before initial use.

### **3.2 SHORE SUPPLY**

- a) Dock hydrants or fill stations are to be flushed for at least five minutes at full volume before being connected to the vessel's fill hose to ensure that standing water in the system has been cleared from the pipe.
- b) Water that is obtained from dock hydrants or fill stations shall be carried from the hydrant to the vessel in hoses that have been specifically marked for the carriage of potable water and are used exclusively for that purpose. When not in use these hoses are to be drained, kept capped, and are to be stored in a clean secured locker used only for potable water equipment. Potable water fill stations and all exterior potable water sounding pipes shall be fitted with a locking mechanism that shall be in use at all times and checked regularly for any breach to security.
- c) If it, at any time, becomes necessary to temporarily supplement the vessel's potable water supply hose with additional lengths, or to connect to a tank operator's hose, the additional hoses shall be dosed with unscented bleach (1 cup per hose filled with water and let sit for 30 minutes) and then flushed with the equivalent of five volumes of water or for two minutes.

### **3.3 WATER PRODUCED ABOARD**

#### **a) Variances**

- There may be occasions where, due to the nature of the operations being conducted or the physical capacities of the vessel, parts of this procedure cannot be followed exactly. In such situations, the Commanding Officer shall ensure, by taking all prudent measures, that the potable water provided is safe for consumption.

- When the vessel is in a contracted refit where the contractor is to supply potable water to the crew, the Commanding Officer shall ensure that the contractor supplies the necessary certificates.
- b) Potable water production equipment shall be operated and maintained in accordance with the manufacturer's instructions and the Site Specific Work Instructions.

### 3.4 ENGINEER OFFICER-OF-THE-WATCH

- a) The Engineer Officer-of-the-Watch shall manufacture water only when advised by the Bridge Officer-of-the-Watch (OOW) that the geographic and operational limitations are favourable. The Engineer Officer-of-the-Watch shall stop manufacturing water immediately upon being advised by the Bridge OOW that conditions are no longer favourable.
- b) When vessels manufacture water aboard, the following conditions shall be considered:
  - The vessel shall be either underway or at anchor.
  - The vessel shall assess the possibility of contamination from shore sources in area.
  - The vessel shall monitor overboard discharges to avoid contamination in the area
  - The vessel shall be a minimum of one (1) nautical mile from shore or ensure that there is no contamination in the area.
  - The vessel shall not be in an area where there is a red tide or algae bloom warning.
- c) Where raw water for producing potable water is being drawn from a shared seabay that is also used for sea water cooling, the sea water cooling system must not be in recirculation mode.
- d) Regionally specified local prohibitions must be observed.
- e) When water production equipment is observed to be malfunctioning (operating outside manufacturer's specifications) the equipment is to be tagged and locked-out from the potable water system until the malfunction has been corrected and the equipment functions acceptably.

### 3.5 DISINFECTION

- a) All potable water, whether bulk purchased or produced aboard, shall be tested to ensure that an appropriate amount of free chlorine exists or that it passes through a functioning irradiation device prior to being used.

**Note 1:** Chlorination standard is 0.2 to 0.5mg/L. To attain a free chlorine level of 0.5 mg/L add unscented bleach (~5% sodium hypochlorite) at a rate of 1L/100m<sup>3</sup>.

**Note 2:** Irradiation standard is 254 nm at a minimum ultraviolet dosage of 16,000 µW.s/cm<sup>2</sup>.

- b) After entry into a potable water tank for any purpose, the tank must be cleaned and superchlorinated with bleach to a level of 50 mg/L of free chlorine. All taps from this tank shall be turned on to supply superchlorinated water to all pipes. It may be necessary to bypass charcoal filtration to ensure chlorinated water is in all parts of the system. The superchlorinated water must be allowed to sit in the tanks for a minimum of 4 hours before being flushed.

**Note 1:** Superchlorination is achieved by adding unscented bleach [~5% sodium hypochlorite] at a volume of 1L/m<sup>3</sup> of water in the tank.

- c) Discharges of wastewater containing free chlorine are restricted by the Canadian Environmental Quality Guidelines. Superchlorinated water shall be de-chlorinated to a free chlorine level below levels of detection (<0.1mg/L) for discharge in saltwater, commercial harbours provided that the discharge takes place at least 100 meters from any seawater intake or aquaculture holding area. Chlorinated wastewater shall not be discharged to a freshwater body or in any sensitive area.
- d) If superchlorinated water cannot be treated for overboard discharge as outlined in this procedure, then the water must be removed by tanker truck for disposal in accordance with provincial or territorial regulations.
- e) Water can be dechlorinated by the introduction of hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>).
- 71 grams of free chlorine are removed by 34 grams of hydrogen peroxide.
  - 1m<sup>3</sup> of water at 50mg/L free chlorine contains 50 grams of free chlorine
  - 1L of 35% strength hydrogen peroxide contains 350 grams of H<sub>2</sub>O<sub>2</sub>
  - To ensure complete free chlorine removal, 33% overdosing with hydrogen peroxide is the Fleet standard.
  - Use the following formula to determine the dosing level  
$$Y \times 0.478 \times 2.857 \times 1.33 = \text{ml of H}_2\text{O}_2 \text{ solution}$$
  
Y = amount of free chlorine (in grams) to be removed
  - To treat 1m<sup>3</sup> of water containing 50mg/L of free chlorine requires approximately 91mL of 35% hydrogen peroxide  
$$50 \times 0.478 \times 2.857 \times 1.33 = 90.81 \text{ ml H}_2\text{O}_2$$
- f) The procedure to be followed for dechlorination is as follows:
- Using the formula given above, add the calculated amount of hydrogen peroxide required to a mixing tank (a ballast tank is suggested but the potable water tank can be used).
  - Using a hose and a quick connect backflow prevented fitting on the potable water tank drain, dump the potable water tank through the valve manifold to the mixing tank. (Permanent connections between the potable water tank and any other tank without anti siphoning device or backflow preventers are not permitted.)
  - Test water in the mixing tank for free chlorine level – must be less than detectable level
  - If any free chlorine is detected add an additional amount of hydrogen peroxide (50% of the original amount used) through the appropriate tank vent(s) and retest

- If the free chlorine level in the mixing tank is less than 0.1mg/L, discharge water in accordance with 3.5 (d) above.
  - If the free chlorine level in the mixing tank is above 0.1mg/L; advise the Chief Engineer and lockout the tank from potential for overboard discharge. Unless in an emergency affecting the safety of the vessel, the water in the mixing tank will now have to be discharged to a tanker truck ashore for disposal.
- g) Record volume of water discharged, location, and results of tests (specify type of kit) showing free chlorine levels less than detection (<0.1mg/L) for a minimum of three samples; beginning, middle, and end of discharge.
- h) Ballast tank may be considered for dechlorination of superchlorinated water.

### 3.6 POTABLE WATER TESTING

- a) Regardless of the source of supply, vessels/station using chlorine as a disinfection agent shall conduct weekly checks of free chlorine level of on board potable water to ensure that free chlorine in drinking water is generally maintained between 0.2 and 0.5 mg/L, but never exceeds 5 mg/L. Tests shall be conducted at the tank and on at least two other downstream outlets: one selected at random; and one on the longest run of pipe.
- b) If the vessel/station uses ultraviolet irradiation for disinfection, the level of irradiance shall be checked daily to ensure that it is within the manufacturer's specification for adequate drinking water disinfection, and the result shall be logged. If chlorine is not introduced to establish a residual chlorine level for maintaining disinfection in the distribution system, then weekly checks shall be made for Escherichia coli (E. Coli) and total Coliform bacteria. Tests shall be conducted on at least two downstream outlets: one selected at random; and one on the longest run of pipe.
- c) Free chlorine test kits shall have sufficient accuracy to determine 0.1 mg/L of free chlorine.
- d) When free chlorine levels are observed to be below 0.2 mg/L, tanks shall be re-chlorinated with a secondary chlorine source (i.e. bleach) to be brought back to approximately 0.5 mg/L by dosing the tank as outlined in Section 3.5 (a) above. If doubts as to the acceptability of the water as being safe for drinking exist, the tank shall be dumped, flushed with fresh water, shocked at a level of up to 50 mg/L free chlorine as outlined in Section 3.5 (b) above, and then recharged.
- e) CCG vessels shall have potable water tested at least every three months, when in service, by an independent laboratory that has been accredited for the purpose of testing water quality. Tests shall be conducted on at least two downstream outlets: one selected at random; and one on the longest run of pipe.
- f) Three of the quarterly tests, identified in Section 3.6 (e) above, will test in five (5) parameters.
- E. Coli must be 0 detectable per 100ml
  - Total Coliform must be 0 detectable per 100ml
  - Total Dissolved Solids must be less than 500 mg/L

- pH must be between 6.5 and 8.5 pH units
  - Iron shall be below 0.3 mg/L
- g) One of the quarterly tests, conducted at least once annually, shall test for contamination in twenty-eight (28) parameters. Acceptable maximum values from the Guidelines for Canadian Drinking Water Quality are shown to the right of each test parameter.

#### Health-based Objectives

• E. Coli	0 per 100ml	• Nitrate/Nitrite	45 mg/L
• Total Coliform	0 per 100ml	• Mercury	0.001 mg/L
• Turbidity	1 NTU	• Selenium	0.01 mg/L
• Antimony	0.006 mg/L	• Uranium	0.02 mg/L
• Barium	1.0 mg/L	• Benzene	0.005 mg/L
• Boron	5.0 mg/L	• Xylenes	0.3 mg/L
• Cadmium	0.005 mg/L	• Fluoride	1.5 mg/L
• Chromium	0.05 mg/L	• Lead	0.01 mg/L
• Ethylbenzene	0.09mg/L		

#### Aesthetic Objectives

• Copper	1.0 mg/L	• Sodium	200 mg/L
• Iron	0.3 mg/L	• Zinc	5 mg/L
• Manganese	0.05 mg/L	• Toluene	0.024mg/L
• pH	6.5 – 8.5 pH Units	• Sulphates	500 mg/L
• Colour	15 TCU	• Chloride	250 mg/L
• Total Dissolved Solids	500 mg/L		

**Note 1:** Aesthetic quality guidelines address parameters which may affect consumer acceptance of drinking water, such as taste, odour and colour.

- h) When forwarding water test samples to laboratories for analysis, vessel/station shall ensure that the ROC is shown as the immediate contact point for the vessel/station in the event that samples indicated that contamination is present.
- i) Stations with potable water supplied by a municipality shall complete the annual test per the Public Works and Government Services Canada (PWGSC) testing standards or any regional variance in place. No other tests are required for stations with municipal water supply.
- j) Stations with potable water that is supplied by a source other than a municipality; shall have their potable water tested at least every three months by an independent laboratory that has been accredited for the purpose of testing water quality. Annually, one of these tests shall be to the twenty-eight parameters identified in 3.6 (g) above. Subsequent tests shall be to the five parameters identified in 3.6 (f) above. Tests shall be conducted on at least two downstream outlets: one selected at random; and one on the longest run of pipe.



### 3.7 CONNECTIONS TO THE POTABLE WATER SYSTEM

- a) When potable water is delivered under pressure to a non-potable system, the potable water system shall be protected against backflow by either backflow preventers, air gaps or anti siphoning device. Backflow preventers shall be located so that they can be serviced and maintained.
- b) The maintenance and testing of these devices shall be done as per manufacturer recommendations and shall be included in the vessel/station preventive maintenance system.
- c) Backflow preventers shall be fitted on potable water connections to:
  - Ice Machines
  - Coffee Machines
  - Chilled water fountains
  - Steam tables
  - Dishwashers
  - Garbage grinders
  - Self-cleaning range hoods
  - Laundry equipment
  - Sick Bays and their associated equipment
  - Boiler feed water tanks
  - Fire systems
  - Toilets
  - Ballast systems
  - Bilge or other waste water connections
  - International shore connection

### 3.8 POTABLE WATER TANK INSPECTIONS

- a) At the time of the potable water tank inspection, a verification shall be made of the physical piping (bulkhead, vent, load lines, hoses, etc.) to ensure that no repairs or alterations have been made to the system that are not in conformance with acceptable practices for the storage and distribution of drinking water.

### 3.9 RECORD RETENTION

- a) Potable water testing records shall be maintained for a period of five years from date of last entry.

### 3.10 TRAINING MEDIA

- a) Vessel and station personnel who are responsible for water quality, filling of any holding tanks, bottled water exchange and/or the maintenance of any portion of the potable water system from source to final distribution point, as applicable to their site, shall view the applicable training media and read the supplied documentation. This requirement shall be added to the familiarization routines of the identified positions aboard each vessel or site.
- Procedures For Conducting Water Sampling in Federal Facilities
  - Ultraviolet and Reverse Osmosis for Micro-Systems
  - Drinking Water Storage Tanks
  - Bottled Water Selection & Application in Federal Facilities
  - Water Wells for Micro-Systems
  - Water Filtration & Ion Exchange for Micro-systems
  - Disinfection for Micro-Systems
  - Advice for the Operation of Potable Water Field Test Equipment
  - Potable Water Test Kits
- b) Health Canada Drinking Water Awareness Program (6 modules available online)
- All Directors, Directors General, the Assistant Commissioner, the Deputy Commissioner Operation and the Commissioner shall view modules 1 and 2
  - All Managers and Supervisors shall view modules 1 to 3
  - All Fleet Safety and Security personnel shall view modules 1 to 6
  - All users of water onboard CCG vessels may view modules 1 to 6 to familiarize themselves with the process of providing potable water.

#### 4 DOCUMENTATION

- Deck Log Records of Water Taken Aboard
- Engineeroom Log of Water Produced Aboard
- Laboratory Test Certificates
- Records of On Board Testing
  - (Disinfection Tests – free chlorine or ultraviolet levels)
  - (Dechlorinated water discharge tests)
- Records of any repairs, modifications, or maintenance
- Records of annual audits conducted on the drinking water system and control documentation that confirm compliance with this procedure
- Health Canada Drinking Water Awareness Program

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## LIST OF ANODE CCGS FREDERICK G. CREED

### PORT OUTSIDE:

5 rectangular anodes 6 " X 11" located in the frames # 24, 19, 14 , 7 and 4 .

1 anode fish 5 1/2 " X 2" 1/ 2 located on frame # 9 in the water box sucking rear ballast outside.

1 anode fish 5 1/2 " X 2 " 1/2 frame # 6 located on the outer shell between the forward ballast tank and the water tank. ( this is the reference anode )

### PORT INSIDE :

4 rectangular anodes 6 " X 11" frames located at # 24, 19, 13 and 5 that is to say, back up the rudder compartment to the rear stabilizer to the engine room and duck front compartment .

2 anodes fish 5 1/2 " X 2 " 1/2 frame # 15 located in the water tank sucking M / O , S / O and fire pump .

1 anode fish 5 1/2 " X 2 " 1/2 frame # 7 located in the water tank suction seawater toilets and air conditioned .

### STARBOARD OUTSIDE:

5 rectangular anodes 6 " X 11" located in the frames # 24,19 , 14, 7 and 4 .

1 anode fish 5 1/2 " X 2" 1/ 2 located on frame # 9 of the outer shell in the water box sucking rear ballast. ( this is the reference anode )

1 anode fish 5 1/2 " X 2" 1/ 2 located on frame # 19 in the water box sucking rear ballast outside.

1 anode 5 "X 1 1/4" rectangular frame located at # 5 in the hole of the transducer Simrad .

2 anodes fish 5 1/2 " X 2 " 1/2 located in frame # 15 in the water box , seawater suction M / E , S / S and fire pumps .

### STARBOARD INSIDE :

4 rectangular anodes 6 " X 11" frames located at # 24, 19, 14 and 5 that is to say, back up the rudder compartment to the rear stabilizer to the engine room and duck front compartment .

1 anode fish 5 1/2 " X 2" 1/ 2 located on frame # 7 in the water box for sucking RO and AC starboard bow.

1 anode 5 "X 1 1/4" x 1 "thick , rectangular , located in the hole of the transducer Simrad .

Well port shaft 2 anodes fish 5 1/2 " X 2" 1 /2.

Well the starboard shaft 2 anodes fish 5 1/2 " X 2" 1 /2.

Ballast tanks forward port and starboard : 8 rectangular anodes 5 " X 11 " X 1 " thick.

Rear ballast tanks port and starboard : 4 rectangular anodes 5 " X 11 " X 1 " thick.