

**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 GRIFFON - SELF REFIT 2012	
<b>Solicitation No. - N° de l'invitation</b> F2599-120248/A	<b>Date</b> 2012-09-07
<b>Client Reference No. - N° de référence du client</b> F2599-120248	<b>GETS Ref. No. - N° de réf. de SEAG</b> PW-\$\$MD-018-23147
<b>File No. - N° de dossier</b> 018md.F2599-120248	<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 2012-09-25</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 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>  Specified Herein Précisé dans les présentes	

**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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## Reissue of Bid Solicitation

**This bid solicitation cancels and supersedes previous bid solicitation number F2599-120160/A dated 2012-08-09 with a closing of 2012-08-23 at 02:00 pm.**

### 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, 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 maintenance and alterations of the Canadian Coast Guard Vessel CCGS Griffon in accordance with the associated Technical Specifications detailed in Annex "A".
  - b) to carry out unscheduled work authorized by the Contracting Authority.
2. Pursuant to section 01 of Standard Instructions 2003 and 2004, a Consent to a Criminal Record Verification form, must be submitted with the bid, by the bid solicitation closing date, for each individual who is currently on the Bidder's Board of Directors.
3. The requirement is exempt from the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), Annex 4 and the North American Free Trade Agreement (NAFTA), Chapter Ten Annex 1001.2b Paragraph 1(a). However, it is subject to the Agreement

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F2599-120248/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

018md

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F2599-120248

File No. - N° du dossier

018mdF2599-120248

CCC No./N° CCC - FMS No/ N° VME

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on Internal Trade (AIT). The sourcing strategy relating to this procurement will be limited to suppliers in Eastern Canada, in accordance with Shipbuilding, Refit, Repair and Modernization Policy (1996-12-19).

### **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 (2012-07-11) 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 "H1" for Deliverables/Certifications.**

## 2.5 Bidders' Conference

A bidders' conference chaired by the Contracting Authority will be held at Canadian Coast Guard, 401 King St. W, Prescott, Ontario on September 19, 2012 @ 09:00. The scope of the requirement outlined in the bid solicitation will be reviewed during the conference and questions will be answered. It is recommended that bidders who intend to submit a bid attend or send representative.

Bidders are requested to communicate with the Contracting Authority before the conference to confirm attendance. Bidders should provide, in writing, to the Contracting Authority, the names of the person(s) who will be attending and a list of issues they wish to table at least **three (3) working days** before the scheduled conference.

Any clarifications or changes to the bid solicitation resulting from the bidder's conference will be included as an amendment to the bid solicitation. Bidders who do not attend will not be precluded from submitting a bid.

## 2.6 Optional Site Visit - Vessel

It is recommended that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for a tour of the work site. The site visit will be held on September 19, 2012 @ 1100 at Canadian Coast Guard, 401 King St. W, Prescott, Ontario. Bidders must communicate with the Contracting Authority no later **than three (3) working days** before the scheduled visit to confirm attendance and provide the name(s) of the person(s) who will attend. Bidders who do not confirm attendance and provide the name(s) of the person(s) who will attend as required will not be allowed access to the site. Bidders will be requested to sign an attendance form. Bidders who do not attend or send a representative will not be given an alternative appointment but they will not be precluded from submitting a bid. Any clarifications or changes to the bid solicitation resulting from the site visit will be included as an amendment to the bid solicitation.

## 2.7 Work Period - Marine

Work must commence and be completed as follows:

Commence:      October 9, 2012  
Complete:        October 26, 2012

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.



## **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)

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

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

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

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

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

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

The Bidder must provide all of the deliverables as referenced in Annex "H1" 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 Goods and Services Tax or Harmonized Sales Tax must be shown separately, if applicable.

##### **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.

## **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 "H1".

### **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 "H2".**

## PART 5 - CERTIFICATIONS

### 5.1 General

Bidders must provide the required certifications to be awarded a contract. Canada will declare the bid non-responsive if the required certifications are not completed and submitted as requested.

Compliance with the certifications bidders provide to Canada is subject to verification by Canada during the bid evaluation period (before award of a contract) and after award of a contract. The Contracting Authority will have the right to ask for additional information to verify the bidders' compliance with the certifications before award of a contract. The bid will be declared non-responsive if any certification made by the Bidder is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.

### 5.2 Certifications Required with the Bid

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

#### 5.2.1 Federal Contractors Program - \$200,000 or more

1. The Federal Contractors Program (FCP) requires that some suppliers, including a supplier who is a member of a joint venture, bidding for federal government contracts, valued at \$200,000 or more (including all applicable taxes), make a formal commitment to implement employment equity. This is a condition precedent to contract award. If the Bidder, or, if the Bidder is a joint venture and if any member of the joint venture, is subject to the FCP, evidence of its commitment must be provided before the award of the Contract.

Suppliers who have been declared ineligible contractors by Human Resources and Skills Development Canada (HRSDC) are no longer eligible to receive government contracts over the threshold for solicitation of bids as set out in the Government Contracts Regulations. Suppliers may be declared ineligible contractors either as a result of a finding of non-compliance by HRSDC, or following their voluntary withdrawal from the FCP for a reason other than the reduction of their workforce to less than 100 employees. Any bids from ineligible contractors, including a bid from a joint venture that has a member who is an ineligible contractor, will be declared non-responsive.

2. If the Bidder does not fall within the exceptions enumerated in 3.(a) or (b) below, or does not have a valid certificate number confirming its adherence to the FCP, the Bidder must fax (819-953-8768) a copy of the signed form LAB 1168, Certificate of Commitment to Implement Employment Equity, to the Labour Branch of HRSDC.
3. The Bidder, or, if the Bidder is a joint venture the member of the joint venture, certifies its status with the FCP, as follows:

The Bidder or the member of the joint venture

- (a) ( ) Is not subject to the FCP, having a workforce of less than 100 full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada;

- (b) ( ) is not subject to the FCP, being a regulated employer under the Employment Equity Act, S.C. 1995, c. 44;
- (c) ( ) is subject to the requirements of the FCP, having a workforce of 100 or more full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada, but has not previously obtained a certificate number from HRSDC (having not bid on requirements of \$200,000 or more), in which case a duly signed certificate of commitment is attached;
- (d) ( ) is subject to the FCP, and has a valid certificate number as follows: \_\_\_\_\_  
(e.g. has not been declared an ineligible contractor by HRSDC.)

Further information on the FCP is available on the HRSDC Web site.

### **5.2.2 Code of Conduct Certifications - Consent to a Criminal Record Verification**

Bidders must submit with their bid, by the bid solicitation closing date:

- (a) a complete list of names of all individuals who are currently directors of the Bidder;
- (b) a properly completed and signed form Consent to a Criminal Record Verification (PWGSC-TPSGC 229), for each individual named in the list.

## PART 6 - FINANCIAL AND OTHER REQUIREMENTS

### 6.1 Financial Capability

#### SACC Manual Clause A9033T (2011-05-16) Financial Capability

### 6.2 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 **10 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 Griffon  
Home port: Prescott, Ontario

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 Manned</b>
New Dock, St. John's Dockyard Ltd.	St. John's	C\$77,156.00
Halifax Shipyard Ltd.	Halifax	C\$62,460.00
Group Verreault Navigation Inc.	Les Mechins	C\$29,329.00
Davie Canada Yard Inc.	Levis	C\$15,267.00
Heddle Marine Service Inc.	Hamilton	C\$13,873.00
Seaway Marine & Industrial Inc.	St. Catharines	C\$12,669.00
Kiewit Offshore Services	Marystown	C\$68,668.00
Shelburne Marine	Shelburne	C\$68,858.00
Oceans Industries Inc.	Quebec, Que.	C\$18,244.00
Fraser Marine	Port Colborne	C\$14,696.00

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

**Refer to Annex "H1" for Deliverables/Certifications.**

### **6.3 Docking Facility**

At the time of bid closing the Bidder must provide detailed documentation stating compliance with **(Specification No. 744.12 Rev.4 Article 2.2 Berthing)**. If this information is not provided with the bid it will render the bid non-responsive.

**Refer to Annex "H1" for Deliverables/Certifications.**

### **6.4 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 "H1" for Deliverables/Certifications.**

### **6.5 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 "H1" for Deliverables/Certifications**

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## 6.6 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 "H1", Deliverables/Certifications.**

## 6.7 Safety Measures for Fueling and Disembarking Fuel

Fueling and disembarking fuel from Canadian government vessels must be conducted under the supervision of a responsible supervisor trained and experienced in these operations.

At bid closing date, the Bidder must provide details of its safety measures for fueling and disembarking fuel together with the name and qualifications of the person in charge of this activity. If this information is not provided with the bid it will render the bid non-responsive.

**Refer to Annex "H1", Deliverables/Certifications.**

## 6.8 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 6.16.

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 "H1" for Deliverables/Certifications.**

## 6.9 Health and Safety

The Bidder must submit with its bid objective evidence that it has a documented Health and Safety system fully compliant with all current Federal, Provincial and Municipal regulations. If this information is not provided with the bid it will render the bid non-responsive.

**Refer to Annex "H1" for Deliverable Requirements.**

## 6.10 Fire Protection, Fire Fighting and Training Procedures

The Bidder must submit with its bid objective evidence that it has documented fire protection, fire fighting and training procedures compliant with current regulations and their insurance requirements. The fire protection, fire fighting and training procedures will, once accepted by Canada, form part of the Contract. Please refer to clause 7.24. If this information is not provided with the bid it will render the bid non-responsive.

**Refer to Annex "H1" for Deliverable Requirements.**

## **6.11 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.

## **6.12 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 "H1", Deliverables/Certifications.**

## **6.13 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 " H1" for Deliverables/Certifications.**

## **6.14 Project Management Services**

The Bidder is required to provide a Project Management Team experienced and capable of successfully managing the ship refit contract as defined herein. Project management personnel, services and deliverables must comply with the requirements detailed in the contract.

### **1. Intent**



(a) Job titles used in this clause are for clarity within this document only. The Contractor is free to choose job titles that suit its organization.

(b) The Contractor, through its Project Management Team, is responsible to discharge the duties and supply the deliverables required in the Contract and the Specifications.

(c) Project Management encompasses the direction and control of such functions as engineering, planning, purchasing, manufacturing, assembly, overhauls, installations and test and trials.

## **2. Project Manager**

(a) The Contractor must supply an experienced Project Manager (PM).

(b) The PM must have experience in managing a project of this nature.

## **3. Project Management Team**

Other than the Project Manager, the Contractor must assign and vary other job descriptions to suit its organization; provided however that the collective resume of its Project Management must provide for the effective control of the project elements including but not limited to:

- i. Project Management
- ii. Quality Assurance
- iii. Planning and Scheduling

## **4. Tender Deliverable**

Names, brief resumes, and list of duties for each of the team members that ensures that each of the project elements listed in Article 3. above have been addressed.

## **5. Reports**

The following Management Reports and Documentation are to be prepared and maintained by the Contractor and submitted to Canada in accordance with the Contract or upon request by the Contracting Authority.

- i. Production Work Schedule
- ii. Inspection Summary Report
- iii. Growth Work Summary

**Refer to Annex "H1" for Deliverables/Certifications.**

## **6.15 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 "H1" for Deliverables/Certifications.**

**6.16 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 "H1" for Deliverables/Certifications.**

**6.17 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 "H1" for Deliverables/Certifications.**

**6.18 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 "H1" 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 maintenance and alterations of the Canadian Coast Guard Vessel CCGS Griffon 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

**2030 (2012-07-16), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.**

**2030 (2012-07-16) 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 09) apply and form part of the Contract**

### General Conditions

**1031-2 (2012-07-16), Contract Cost Principles, 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: October 9, 2012  
Complete: October 26, 2012

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.

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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:

Selim Ullah  
Senior Vessel Maintenance Manager, Marine Engineering, C&A Region  
Canadian Coast Guard  
Central and Arctic Region  
520 Exmouth Street  
Sarnia, Ontario  
N7T 8B1  
Telephone (519) 383-1807  
Cell (519) 330-5127  
Fax (519) 383-1990  
E-mail: selim.ullah@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.

Name will be determined at Contract Award

Name: \_\_\_\_\_  
 Telephone: \_\_\_\_\_  
 Cell: \_\_\_\_\_  
 Fax: \_\_\_\_\_  
 E-mail: \_\_\_\_\_

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.

### 7.4.4 Contractor Contacts

Name and Telephone numbers of person responsible for:

#### General Enquiries:

Name \_\_\_\_\_ Telephone Number \_\_\_\_\_  
 Fax Number \_\_\_\_\_ E-mail Address \_\_\_\_\_

#### Delivery Follow-up:

Name \_\_\_\_\_ Telephone Number \_\_\_\_\_  
 Fax Number \_\_\_\_\_ E-mail Address \_\_\_\_\_

## 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) Liens - Section 427 of the Bank Act**

## 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.

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### 7.6.1 Invoices

1. Invoices are to be made out to:

Canadian Coast Guard  
Marine Engineering  
520 Exmouth Street  
Sarnia, Ontario  
N7T 8B1

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. The Goods and Services Tax or Harmonized Sales Tax (GST/HST), as applicable, 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 GST/HST 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 (GST/HST 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. Goods and Services tax or Harmonized Sales tax (GST/HST), 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 GST/HST payable, as it was included in previous payments.

### **7.7 Certifications**

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.

### **7.8 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, (2012-07-16), General Conditions - Higher Complexity - Goods
- (d) the General Conditions 1031-2, (2008-05-12), 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", Deliverables/Certifications
- (m) Annex "I", Consent to Criminal Record Verification Form
  - a) complete list of names of all individuals who are currently directors for the Bidder
  - b) completed and signed form Consent to a Criminal Record Verification
- (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.

#### **7.12 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.

#### **7.13 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.

#### **7.14 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.

#### **7.15 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.

## 7.16 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.

## 7.17 Project Management Services

The Contractor is required to provide their own Project Management Team experienced and capable of successfully managing the ship repair contract as defined herein. Project management personnel, services and deliverables must comply with the requirements detailed in the contract.

### 1. Intent

(a) Job titles used in this annex are for clarity within this document only. The Contractor is free to choose job titles that suit its organization.

(b) The Contractor, through its Project Management Team, is responsible to discharge the duties and supply the deliverables required in the Contract and the Specifications.

(c) Project Management encompasses the direction and control of such functions as engineering, planning, purchasing, manufacturing, assembly, overhauls, installations and test and trials.

### 2. Project Manager

(a) The Contractor must supply an experienced Project Manager (PM).

(b) The PM must have experience in managing a project of this nature.

### 3. Project Management Team

Other than the Project Manager, the Contractor must assign and vary other job descriptions to suit its organization; provided however that the collective resume of its Project Management must provide for the effective control of the project elements including but not limited to:

- i. Project Management
- ii. Quality Assurance
- iii. Planning and Scheduling

### 4. Reports

The following Management Reports and Documentation are to be prepared and maintained by the Contractor and submitted to Canada in accordance with the Contract or upon request by the Contracting Authority.

- i. Production Work Schedule
- ii. Inspection Summary Report
- lii. Growth Work Summary

### 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.**

### 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 Supervision of Fueling and Disembarking Fuel**

The Contractor must ensure that fueling and disembarking of fuel from Canadian government vessels are conducted under the supervision of a responsible supervisor trained and experienced in these operations.

All fueling and disembarking of fuel on CCGS Griffon must be done in accordance with the Contractor's submitted and accepted procedures.

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

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

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## 7.25 Loan of Equipment - Marine

The Contractor may apply for the loan of the Government special tools and test equipment particular to the subject vessel as identified in the Specifications. The provision of other equipment required for the execution of work in the Specifications is the sole responsibility of the Contractor.

Equipment loaned under this provision must be used only for work under this Contract and may be subject to demurrage charges if not returned on the date required by Canada. In addition, equipment loaned under the above provision must be returned in a like condition, subject to normal wear and tear.

A list of Government equipment that the Contractor intends to request must be submitted to the Contracting Authority within **three (3) days** of Contract Award to permit timely supply or for alternate arrangements to be made. The request must state the time frame for which the equipment is required.

**Refer to Annex "H2" for Deliverables/Certifications.**

## 7.26 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.

## 7.27 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".**

## 7.28 Vessel Manned Refits

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

## 7.29 Pre-Refit Meeting

A Pre-Refit meeting will be convened and chaired by the Contracting Authority at the yard 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.

## 7.30 Progress Meetings

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

## 7.31 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.

**Refer to Annex "H" for details of Acceptance Procedures and Reports.**

## 7.32 Not Used

## 7.33 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.

## 7.34 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.

## 7.35 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.



### 7.36 Dispute Resolution

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

- (a) Disputes arising from this Contract will in the first instance be resolved by the Contracting Authority and the Contractor's Contract Administrator within 15 working days or such additional time as may be agreed to by both parties.
- (b) Failing resolution under (a) above, the Manager of the Ship Refit Division (MD) of the Marine Systems Directorate at PWGSC and the Contractor's Representative Supervisor will attempt to resolve the dispute within an additional fifteen (15) working days.
- (c) Failing resolution under (a) or (b) above, the Senior Director of the Marine Systems Directorate at PWGSC, and the Contractor's Senior Management will attempt to resolve the dispute within an additional thirty (30) working days.
- (d) Notwithstanding the above procedure, either party may seek a decision through the courts at any time during the dispute.

### 7.37 Failure to Deliver

Time is of the essence of the Contract. Changes in the Completion date not caused by Canada are Contractor defaults, will prejudice Canada and are at the Contractor's expense. The Completion date will not be extended without consideration being provided by the Contractor acceptable to Canada in the form of adjustment to the price, warranty or services to be provided.

### 7.38 Care, Custody and Control

Refer to Supplemental General Conditions 1029 (2010-08-16) Ship Repairs Article 08 Where Vessel In Commission.

### 7.39 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.

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## **ANNEX A**

### **Technical Specification**

**CCGS Griffon Self Refit 2012 Rev 4.**

**Specification No: Spec # 744.12**

**Date: 2012-08-30**

**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>GST or HST as applicable of line a) only</b>	<b>\$</b>
<b>C)</b>	<b>Total Firm Price GST/HST 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.

**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.

**B4 Daily Services Fee**

In the event of a delay in the performance of the Work that lengthens the Work period beyond the date specified in this Contract, and if such delay is recognized and agreed upon by the Contracting Authority as being attributable to Canada, Canada agrees to pay the Contractor the daily services fee, described below, for each day of such delay. This fee shall be the sole liability of Canada to the Contractor for the delay.

The firm daily services fee is:

(a) For a working day: \$ \_\_\_\_\_

(b) For a non-working day: \$ \_\_\_\_\_

The above fees shall include but not be limited to, all aspects of the following costs: Project Management Services, Administrative Support, Production Services, Quality Assurance, Material Support, Planned Maintenance and Ship Services, and all other resources and direct costs needed to maintain the Vessel at the Contractor's facility. These fees are firm and not subject to any additional charges for mark-up or profit.

**B5 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. The Contractor is responsible for the performance of all subcontractors and FSRs.

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, Craneage and Transportation: include the cost of all sheltering, staging including handrails, craneage and transportation to carry out the Work as specified.

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

**B6 Pricing Data Sheets**

Parameters from the Pricing Data Sheets will be used at Canada's sole discretion in the determination of unscheduled work price.

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**ANNEX C****INSURANCE REQUIREMENTS****C.1 Ship Repairers' Liability Insurance**

1. The Contractor must obtain Ship Repairer's Liability Insurance and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$10,000,000 per accident or occurrence and in the annual aggregate.
2. The Ship Repairer's Liability insurance must include the following:
  - a. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.
  - b. Waiver of Subrogation Rights: Contractor's Insurer to waive all rights of subrogation against Canada as represented by 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.

(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 Non-opérationnel</td> <td style="text-align: center;">Degraded Dégradé</td> <td style="text-align: center;">Operational Opérationnel</td> <td style="text-align: center;">Non-operational</td> </tr> </table>	Critical Critique Non-opérationnel	Degraded Dégradé	Operational Opérationnel	Non-operational
Critical Critique Non-opérationnel	Degraded Dégradé	Operational Opérationnel	Non-operational			

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

Contact Information – l'information de contact			
Name – Nom	Tel. No. - N ° Tél	Signature – Signature	Date

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

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

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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>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: 750 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: 75 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: 75 person hours X \$_____ per hour for a PRICE of: See Article G3 below.</p>	<p><b>\$</b></p> <p><b>\$</b></p> <p><b>\$</b></p>
<b>C)</b>	<p>Daily Service Fees for evaluation purpose only As per Clause G4</p> <p>i) Ten (10) working days X \$_____ firm daily service fee = \$_____</p> <p>ii) Four (4) non-working days X \$_____ firm daily service fee = \$_____</p>	<b>\$</b>
<b>D)</b>	<p>Vessel Transfer Cost as Per Clause G6</p> <p>Proposed shipyard / ship repair facility: _____</p>	<b>\$</b>
<b>E)</b>	<p>EVALUATION PRICE GST Excluded, [A + B + C+D]:</p> <p>For an EVALUATION PRICE of (GST/HST excluded):</p>	<b>\$</b>

## 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 Daily Services Fee**

In the event of a delay in the performance of the Work, and if such delay is recognized and agreed upon by the Contracting Authority as being attributable to Canada, Canada agrees to pay the Contractor the daily services fee, described below, for each day of such delay. This fee shall be the sole liability of Canada to the Contractor for the delay.

The firm daily services fee is:

- (a) For a working day: \$ \_\_\_\_\_
- (b) For a non-working day: \$ \_\_\_\_\_

The above fees shall include but not be limited to, all aspects of the following costs: Project Management Services, Administrative Support, Production Services, Quality Assurance, Material Support, Planned Maintenance and Ship Services, and all other resources and direct costs needed to maintain the Vessel at the Contractor's facility. These fees are firm and not subject to any additional charges for mark-up or profit.

**G5 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.

## **G6 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 3 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 Griffon  
Home port: Prescott, Ontario

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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018md

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

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CCC No./N° CCC - FMS No/ N° VME

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

<b>Company</b>	<b>City</b>	<b>Transfer Cost Manned</b>
New Dock, St. John's Dockyard Ltd.	St. John's	C\$77,156.00
Halifax Shipyard Ltd.	Halifax	C\$62,460.00
Group Verreault Navigation Inc.	Les Mechins	C\$29,329.00
Davie Canada Yard Inc.	Levis	C\$15,267.00
Heddle Marine Service Inc.	Hamilton	C\$13,873.00
Seaway Marine & Industrial Inc.	St. Catharines	C\$12,669.00
Kiewit Offshore Services	Marystown	C\$68,668.00
Shelburne Marine	Shelburne	C\$68,858.00
Oceans Industries Inc.	Quebec, Que.	C\$18,244.00
Fraser Marine	Port Colborne	C\$14,696.00

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



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

<b>Spec. #</b>	<b>Description</b>	<b>Total Hours</b>	<b>Total Labour Cost</b>	<b>Total Material Cost</b>	<b>Total FSR&amp; Sub-Contractors Cost</b>	<b>Total Firm Price</b>	<b>Unit Cost</b>
2.0	SERVICES		\$	\$	\$	\$	
2.6.5	Unit Rate/Kw,Hr. for electrical consumption						\$
2.7.6	Unit Rate/for Potable Water per cubic Meter						\$
2.11.1	For Crane (15 Hours)					\$	
5.0	BILGE CLEANING		\$	\$	\$	\$	
5.3.2	Unit Rate/Cubic Meter of Oily Water						\$
6.0	FUEL TANK CLEANING AND INSPECTION (SURVEY ITEM)		\$	\$	\$	\$	
6.3.2	Unit Rate/Cubic Meter Removing Fuel from Tanks						\$
7.0	SPRINKLER PUMP REPLACEMENT (SURVEY ITEM)		\$	\$	\$	\$	
8.0	EMERGENCY FIRE PUMP REPLACEMENT (SURVEY ITEM)		\$	\$	\$	\$	
9.0	PROPULSION COOLING WATER PUMP REPLACEMENT (SURVEY ITEM)		\$	\$	\$	\$	
10.0	LIFTING POINT INSTALLATION		\$	\$	\$	\$	
11.0	REPAIR OF MIRANDA DAVIT SHEAVES		\$	\$	\$	\$	
12.0	RELOCATION OF GALLEY POWER PANEL (SURVEY ITEM)		\$	\$	\$	\$	

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Spec. #	Description	Total Hours	Total Labour Cost	Total Material Cost	Total FSR& Sub-Contractors Cost	Total Firm Price	Unit Cost
13.0	GALLEY WATER DRAIN PIPING REPAIRS		\$	\$	\$	\$	
14.0	SEWAGE PLANT PARTIAL VENT REPLACEMENT		\$	\$	\$	\$	
	<b>TOTAL</b>		\$	\$	\$	\$	

## ANNEX H DELIVERABLES/CERTIFICATIONS

### H1 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 "H1" 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 G6;	
3	Completed Pricing Data Sheets, per clause 3.1 Section II, Annex "G", Appendix 1;	
4	Completed Annex "H1" Deliverables/Certifications;	
5	Changes to Applicable Laws (if any), as per clause 2.4	
6	Federal Contractors Program for Employment Equity, Complete section 5.2.1;	
7	Submission of Consent to Criminal Record Verification Forms as per, section 5.2.2 and attached as Annex "I ";	
8	A) & B)	
8	Docking Facility - as per Specification No. 744.12 Rev.4 Article 2.2 - Berthing	
9	Proof of good standing with Worker's Compensation Board, as per clause 6.4	
10	Proof of valid Labor Agreement or similar instrument covering the work period, as per clause 6.5	
11	Preliminary Work Schedule , per clause 6.6;	
12	Fueling and Disembarking Procedures, as per clause 6.7	
13	If Registered its Valid ISO 9001-2008 Certification, as per clause 6.8	
14	Objective evidence of documented Health and Safety System, as per clause 6.9;	
15	Objective evidence of documented Fire Protection, Fire Fighting and Training Procedure, as per clause 6.10	
16	Insurance Requirements, as per clause 6.12	
17	Proof of welding certification, as per clause 6.13	
18	Project Management as per clause 6.14 (4)	
19	List of subcontractors, as per clause 6.15	
20	Example of its Quality Control Plan, as per clause 6.16	
21	Example of an Inspection and Test Plan as per clause 6.17	
22	Details of Environmental Emergency Response Plan, Details of Formal Environmental Training as per Clause 6.18	

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## H2 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
2	Revised Work Schedule	Clause 7.13	5 calendar days after contract award
4	The Contractor's Quality Control Plan	Clause 7.18	5 calendar days after contract award
5	The list of Government specialized loaned equipment that the Contractor intends to request.	Clause 7.25	3 calendar days after contract award

# **CCGS Griffon Self Refit 2012 Rev 4.**

Specification No: 744.12

Date: August 30, 2012

Prepared by Marine Engineering  
520 Exmouth Street  
Sarnia, Ontario  
N7T 8B1

**DO NOT MODIFY**

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**DO NOT MODIFY**

## **1.0 GENERAL NOTES**

### **1.1 Identification**

- 1.1.1 These General Notes describe the CCG requirements applicable to all accompanying Technical Specifications.

### **1.2 Work Period**

- 1.2.1 The work period for this contract is October 9 to Oct 26, 2012.

### **1.3 Reference**

#### **1.3.1 Applicable documentation:**

FSSM Procedures	Title	Included Yes/No
7.B.2.	Fall Protection	Yes
7.B.3	Hazard Prevention Program	Yes
7.D.9	Entry Into Confined Spaces	Yes
7.D.11	Hotwork	Yes
7.D.19	Lockout and Tagout	Yes
10.A.2	Contractor Liability	Yes

#### **1.3.2 Publications:**

TP3177E	Standard for the Control of Gas Hazards in Vessels to be Repaired or Altered	
TP 127E	Transport Canada Marine Safety Electrical Standard	
IEEE 45	Recommended Practice for Electrical Installation on Ships	
CSA W47.1	Certification of Companies for Fusion Welding of Steel Structures Division 2 Certification	
CSA W47.2	Certification of Companies for Fusion Welding of Aluminum	
CSA W59	Welded Steel Construction – Metal Arc Welding	
CSA W59.2	Welded Aluminum Construction	

**DO NOT MODIFY**

**1.3.3 Acts & Regulations:**

<b>Acts &amp; Regulations</b>		
CSA	Canada Shipping Act	
CLC	Canada Labour Code	
MOHS	Marine Occupational Health and Safety	

**1.4 Occupational Health and Safety**

- 1.4.1 The Contractor and all sub-contractors shall follow Occupational Health and Safety (OHS) procedures in accordance with applicable federal and provincial OHS regulations ensuring that Contractor activities are carried out in a safe manner and do not endanger the safety of any personnel.
- 1.4.2 The Contractor and the Contractor's employees, including any sub-contractors shall attend a safety orientation meeting of the vessel prior to the commencement of any work in order to familiarize the Contractor's employees with ship specific hazards and permit systems for work protocols as well as procedures for Security, Hazard Prevention, Hazard Intervention and Pre-Job Safety Assessments. The Contractor will have access to an uncontrolled copy of the Fleet Safety and Security Manual.
- 1.4.3 The Contractor shall comply with the Fleet Safety and Security Manual, DFO/5737 and shipboard work instructions in addition to the applicable Canada Labour Code regulations while performing work involving the following;
- Hot Work;
  - Work Aloft;
  - Confined Space Entry;
  - Gas Freeing for Entry and Hot Work;
  - Lock Out/Tag Out;
  - Pre-Job Safety Assessments.
- 1.4.4 For the purpose of the Lock Out/Tag Out procedure the Contractor shall supply locks and locking devices for the Contractor's employees in addition to those provided by the Chief Engineer for the ship's crew.
- 1.4.5 The Contractor shall supply a copy of a certified marine chemist or other qualified person's Gas Free Certificate to the Technical Authority where any work shall be carried out in tanks or bilge areas prior to commencing work. The certificates shall specify, "Safe for persons" or "Safe for hot work" as appropriate. All Certificates shall be posted in full view and adjacent to the opening of the compartment.

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**DO NOT MODIFY**

All tanks and pipe tunnels which have been opened for inspection and testing are to be cleaned and submitted for a final inspection by the Technical Authority prior to the closing of the space.

- 1.4.6 The Contractor and Contractor's employees will not have access to the vessel's washrooms and crew mess facilities. The Contractor shall provide the necessary amenities for the Contractor's and sub-contractors employees as required.

**1.5 Access to Worksite**

- 1.5.1 The Contractor shall ensure the TA and CG staff has unrestricted access to the worksite at all times during the contract period.

**1.6 Workplace Hazard Material Information System (WHMIS)**

- 1.6.1 The Contractor must provide the TA with Material Safety Data Sheets (MSDS) for all Contractor supplied WHMIS controlled products.
- 1.6.2 The TA will provide the Contractor with access to MSD sheets for all controlled products on the ship for all specified work items.

**1.7 Smoking in the Work Space**

- 1.7.1 The Contractor must ensure compliance with the Non- Smokers' Health Act. The Contractor shall ensure that every employer, and any person acting on behalf of an employer, shall ensure that persons refrain from smoking in any work space under the control of the employer. The Contractor shall ensure that there is absolutely no smoking onboard the vessel.

**1.8 Clean and Hazard Free Worksite**

- 1.8.1 Before the Contractor starts any work on the vessel the Contractor's Quality Assurance Representative, the TA shall walk through each space and area where work is to take place, including access and removal routes and areas adjacent to those where the work is to be done as a result of this specification. The Contractor's Quality Assurance Representative shall take digital pictures of each area showing the outfit therein and download the photos in JPG format onto a CD or DVD. Each picture shall be dated and labeled as to the location on the vessel. Copies of this CD or DVD are to be provided to the TA for reference purposes within 48 hours of the start of the contract.
- 1.8.2 The Contractor, during the work period shall maintain those areas of the vessel which Contractor personnel use to access those areas where work is to be undertaken, in a clean condition, free from debris and remove garbage daily.
- 1.8.3 Areas that pose a hazard as a result of the specification work are to be secured and clearly identified by the Contractor with signage to advise and protect all personnel from the hazard in accordance with applicable Canada Labour Code requirements.

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**DO NOT MODIFY**

- 1.8.4 Upon completion of this contract, the Contractor shall be responsible for the removal of all garbage generated from the work of this specification and for returning the vessel to the state of cleanliness in which the vessel was at the start of the contract period.
- 1.8.5 Once all known work and final clean-up has been completed the Contractor's QA Representative and TA shall perform a 'walk through' of the vessel to view all areas where work was performed by the Contractor. Any deficiencies or damage noted shall be recorded and compared to the photos and if deemed to have been caused by the Contractor as a result of the work the damage shall be repaired by the Contractor at no cost to the Coast Guard.

**1.9 Fire Protection**

- 1.9.1 The Contractor must ensure the isolation, removal and installation of fire detection and suppression systems or any components thereof, is performed by a qualified technician. When the fire detection or fire suppression system is deactivated or disabled by the Contractor during the contract, the system(s) must be recertified by a qualified technician as fully functional. A signed and dated original copy of the certificate must be delivered to the TA before the end of the contract.
- 1.9.2 The Contractor must notify the TA and obtain written approval from the TA prior to disturbing, removing, isolating, deactivating / disabling or locking out any part of the fire detection or suppression systems, including heat and smoke sensors.
- 1.9.3 The Contractor must ensure protection against fire at all times including when working on the ship's fire detection and / or suppression system(s). This may be accomplished as suggested below and only with the written permission of the TA:
- Disabling only one portion of a system at a time;
  - By maintaining system function using spares while work is in progress;
  - Other means acceptable to and approved by the TA.
- 1.9.4 The Contractor must note that failure to take the necessary precautions while performing work on the vessel's fire suppression system(s) could result in the accidental discharge of the fire suppression agent(s). The Contractor must recharge and certify at his cost, container(s) or systems that are discharged as a result of such work.

**1.10 Touch-up / Disturbed Paint**

- 1.10.1 Unless stated otherwise the Contractor shall supply and apply two coats of marine primer compatible with the vessel's existing coating system to all new and/or disturbed metal surfaces.
- 1.10.2 The Contractor shall prepare all new and disturbed steelwork to the paint manufacturer's standards prior to painting.

**1.11 CCG Employees and Others on the Vessel**

- 1.11.1 CCG / DFO employees and other personnel such as manufacturer's representatives and/or TCMS or Class surveyors may carry-out other work including work items not

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**DO NOT MODIFY**

included in this specification, onboard the vessel during this work period. Every effort will be made by the TA to ensure this work and the associated inspections and/or surveys do not interfere with the Contractor's work. The Contractor will not be responsible for coordinating the related inspections or payment of inspection fees for this

**1.12 Regulatory Inspections and/or Class Surveys**

- 1.12.1 The Contractor shall contact, coordinate and schedule all regulatory inspections and/or class surveys by the applicable authority: i.e. TCMS, HC, Environment Canada or others as required by the specification.
- 1.12.2 Any documentation generated by the above inspections and/or surveys to show that the inspections and/or surveys were conducted (i.e. original signed and dated certificates) must be provided to the TA.
- 1.12.3 The Contractor must not substitute inspection by the TA for the required TCMS regulatory inspections or Class surveys.
- 1.12.4 The Contractor must provide timely advance notification (minimum of 24 hours) of scheduled regulatory TCMS inspections and/or class surveys to the TA so they may witness the inspection.

**1.13 Test Results and Data Book**

- 1.13.1 The Contractor shall develop a Test and Trials Plan which shall include as a minimum, all tests and trials stated in the specification. This plan shall be provided for TA review one week prior to the originally scheduled Tests and Trials commencement.
- 1.13.2 All tests, measurements, calibrations and readings must be recorded, signed by the person taking the measurements, dated and provided in report format both in hard copy and electronic format, to the TA and TCMS.
- 1.13.3 Recorded dimensions shall be to a precision of three decimal places (unless otherwise stated) in the measuring system currently in use on the vessel.
- 1.13.4 The Contractor shall provide to the TA current and valid calibration certificates for all instrumentation used in the Test and Trials Plan showing that the instruments have been calibrated in accordance with the manufacturer's instructions.
- 1.13.5 Hard copy reports shall be bound in standard 3-ring binders, type written on letter size paper and indexed by specification number. Electronic copies shall be in unprotected Adobe PDF format and provide on CD-ROM media. The Contractor shall provide 3 hard copies and 1 electronic copy of all reports.
- 1.13.6 All documentation from the contract period shall be inserted in a data book and delivered to the TA on completion of the contract.
- 1.13.7 For any drawings requested, the drawings shall be plotted on standard ANSI paper size paper – minimum ANSI B (11" x 17"). Three copies shall be provided.

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**DO NOT MODIFY**

Also the drawings shall be provided in AutoCAD 2000 DWG format (as a minimum – more recent versions are acceptable) and shall be on CD-ROM media. The drawings shall not be password protected. One (1) copy shall be provided

**1.14 Contractor Supplied Materials and Tools**

- 1.14.1 The Contractor must ensure all materials are new and unused.
- 1.14.2 The Contractor must ensure replacement material such as jointing, packing, insulation, small hardware, oils, lubricants, cleaning solvents, preservatives, paints, coatings, bolts and bolting materials etc. are in accordance with the equipment manufacturer's drawings, manuals and/or instructions.
- 1.14.3 Where no particular item is specified or where substitution must be made, the TA must approve the substituted item in writing. The Contractor must provide information about materials used, certificate of grade and quality of various materials to the TA prior to use.
- 1.14.4 The Contractor shall provide all equipment, devices, tools and machinery such as welding machines, cranes, staging, scaffolding and rigging necessary for the completion of the work in this specification.
- 1.14.5 The Contractor shall provide waste disposal services for any oil, oily waste or other hazardous or controlled waste generated by the work of this specification. The Contractor shall provide waste disposal certificates for all of the above generated waste and the disposal certificates shall indicate that the disposal was in accordance with Federal, Provincial and Municipal regulations in effect.

**1.15 Government Supplied Materials & Tools**

- 1.15.1 All tools are Contractor supplied unless otherwise stated in the technical specifications.
- 1.15.2 Where tools are supplied by the TA they shall be returned by the Contractor in the same condition as when they were borrowed. Borrowed tools must be inventoried and signed for by the Contractor on receipt and return to the TA.
- 1.15.3 Any Government supplied material (GSM) shall be received by the Contractor and stored in a secure warehouse or storeroom having a controlled environment appropriate for the equipment as per manufacturer's instructions.

**1.16 Restricted Areas**

- 1.16.1 The Contractor must not enter the following areas except to perform work as required by the specifications: all cabins, offices, workshops, Engineers' office, Wheelhouse, Control Room, all washrooms, Galley, Mess Rooms, Lounge areas and any other areas restricted by signage.
- 1.16.2 The Contractor must give the TA 24 hours advance notice prior to working in any accommodation areas or office spaces. This will allow CCG adequate time to move personnel and secure the areas.



**DO NOT MODIFY**

**1.17 Contractor Inspections and Protection of Equipment and the Worksite**

- 1.17.1 The Contractor must coordinate an inspection with the TA on the condition and location of items to be removed prior to carrying out the specified work or to gain access to a location to carry out the work.
- 1.17.2 Any damage incurred as a result of the Contractor's work and that is attributable to the Contractor's work performance shall be repaired by the Contractor at his expense. Materials used in any replacement or repairs must meet the criteria for Contractor supplied material noted above in section Contractor Supplied Materials and Tools.
- 1.17.3 The Contractor shall protect all equipment and surrounding areas from damage. Work areas are to be protected from the ingress of water, welding and blasting grit etc. Temporary covers to work areas must be installed.
- 1.17.4 The Contractor must protect the vessel from the possibility of vermin infestation (insect/mammal). If an infestation does occur during the contract period the Contractor shall bear all costs to ensure the vessel is made vermin free before the vessel's departure and contract completion.

**1.18 Recording of Work in Progress**

- 1.18.1 The TA may record any work in progress using various means including, but not limited to photography and video, digital or film.

**1.19 List of Confined Spaces**

- 1.19.1 The Contractor may request a list of the vessel's identified confined spaces at the Pre-Refit meeting.

**1.20 Lead Paint and Paint Coatings**

- 1.20.1 The Contractor shall not use lead based paints.
- 1.20.2 CG ships have been painted with lead based paints in the past and as a result some of the Contractor's processes such as grinding, welding and burning may release this lead from the coatings. The Contractor shall ensure that coatings in the affected work areas are tested for lead content and that the work is performed in accordance with applicable Federal and Provincial regulations.
- 1.20.3 The Contractor must provide HC product approval for underwater hull surface paints controlled by HC and the Pest Management Regulatory Agency.

**1.21 Asbestos Containing Materials**

- 1.21.1 The Contractor shall not use any asbestos containing materials.
- 1.21.2 Handling of any asbestos containing materials shall be performed by personnel trained and certified in the removal of asbestos in accordance with Federal, Provincial and Municipal regulations in effect and in accordance with the Fleet Safety and Security Manual. The Contractor shall provide the TA with disposal certificates for all asbestos

**DO NOT MODIFY**

containing material removed from the vessel indicating that the disposal was in accordance with Federal, Provincial and Municipal regulations in effect.

**1.22 Removed Materials and Equipment**

- 1.22.1 All removed equipment as a result of this specification shall remain the property of the Coast Guard unless otherwise instructed in the specification sections.

**1.23 Welding Certification**

- 1.23.1 For any item requiring the application of fusion welding for steel structures, the Contractor or his Sub-Contractors shall be certified in accordance with the Canadian Welding Bureau, CSA\ACNOR W47.1; Division 2.1 certification – latest revision.
- 1.23.2 For any item requiring the application of fusion welding for stainless steel structures, the Contractor or his Sub-Contractors shall be certified in accordance with the Canadian Welding Bureau, CSA\ACNOR AWS; Division 16 certification – latest revision.
- 1.23.3 For any item requiring the application of fusion welding to aluminum structures, the Contractor or his Sub-Contractors shall be certified in accordance with the Canadian Welding Bureau, CSA\ACNOR W47.2; Division 2.1 certification – latest revision.
- 1.23.4 The Contractor shall provide documentation to the Technical Authority clearly identifying the welding certification of all employees performing any welding included in this specification.

**1.24 Electrical Installations**

- 1.24.1 All electrical installations and repairs shall be carried out in accordance with the latest revisions of Transport Canada Marine Safety Electrical Standard TP127E and IEEE Standard 45 Recommended Practice for Electrical Installation on Ships.
- 1.24.2 All installations of electronic equipment shall be carried out in accordance with Canadian Coast Guard Telecommunications and Electronics publication CGTS-3(E) entitled “General Specification for the Installation of Shipboard Electronic Equipment”.

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**DO NOT MODIFY**  
**SERVICES**

**2.1 General**

- 2.1.1 The Contractor shall supply the following services to the vessel for the entire work period and disconnect upon completion of the work period. The Contractor shall be responsible for the re-establishment of services if the vessel is moved during the work period.
- 2.1.2 Each of the services noted below shall be separately priced in the Contractor's submitted bid.
- 2.1.3 The Contractor shall be responsible for supplying all material, hoses, cables etc. and labour required to connect and disconnect the services to the vessel. Unless otherwise stated these services shall be available 24 hours a day 7 days a week for the entire contract period.
- 2.1.4 All staging, craneage, screens, lighting and any other support services, equipment and materials necessary to carry out the work identified in these specifications shall be Contractor supplied.

**2.2 Berthing**

- 2.2.1 The berthing and mooring facilities must be suitable for a vessel of this size in local weather / tide / sea conditions. Fenders shall be supplied by the Contractor to prevent the vessel from contacting the wharf in local weather / tide / sea conditions.
- 2.2.2 The length of the dock must be a minimum of 90% of the length of the vessel (LOA).
- 2.2.3 During the contract period, when the ship is not in the dry dock, the ship must be berthed at the Contractor's wharf at a safe and secure location with a minimum clearance of 2 meters under the vessel at extreme low tide to ensure the vessel will not touch bottom.
- 2.2.4 The Contractor shall be responsible for all movements of the vessel, including berthing and mooring of the vessel for the contract period and arrangements and costs for line handlers, tugs and pilots.

**2.3 Mooring Lines**

- 2.3.1 The Contractor shall be responsible for providing the necessary mooring lines and labour required to secure the vessel alongside the facilities. Ship's mooring lines are not to be used.

**2.4 Gangways**

- 2.4.1 Contractor shall supply the labour and services required for the installation and removal of two gangways, complete with handrails, safety nets and lighting for the duration of the contract. The Contractor shall be required to supply and maintain the gangways.
- 2.4.2 Any movement of the gangways required by the Contractor will be at the expense of the Contractor.

**DO NOT MODIFY**

2.4.3 Gangways shall be at separate locations to facilitate fire evacuation.

**2.5 Not Used**

**2.6 Electrical Power**

2.6.1 The Contractor shall be responsible for supplying 600Volt Alternating Current, 60 Hertz, 3 Phase, 300 Ampere service electrical power for the duration of the contract.

2.6.2 The Contractor shall be responsible for supplying and connecting the necessary shore cable to the ship's shore power connection.

2.6.3 The Contractor shall be responsible for ensuring that the correct phase rotation on a 3 – phase system is established prior to energizing the ship's distribution system. Any changes to the ship's power system to accommodate the Contractor supplied shore power connections must be returned to the original setup by the Contractor upon the disconnection of the Contractor supplied power cable and equipment. All work shall be carried out by certified electricians.

2.6.4 The Contractor shall supply all power to the vessel through a Contractor supplied kilowatt-hour meter. The Contractor shall read the kilowatt-hour meter when the connection is made and once again when the power is disconnected. Both readings of the meter shall be witnessed by the TA. The Contractor shall provide a calibration certificate for the kilowatt-hour meter.

2.6.5 The Contractor shall supply a price quote per kilowatt-hour for electrical power for the duration of the work period.

2.6.6 Final price for this item shall be determined at the end of the contract once the meter has been read The final power consumption total shall be adjusted up or down by PWGSC 1379 action.

**2.7 Potable Water Supply**

2.7.1 The Contractor shall provide a 2 inch diameter sized hose, disinfected and certified for use for potable water only, to supply potable water to the vessel. Water shall be supplied through a calibrated pressure regulator and calibrated water meter, complete with pressure gauge and isolation valve. Potable water pressure shall be capable of being regulated between 40 to 100 psig. The dock connection shall be flushed for at least 5 minutes before connecting the supplied hose to the ship to ensure standing water in the system has been cleared from the pipe.

2.7.2 The Contractor shall read the water meter at the beginning of the contract period and again at the end. The readings shall be taken in the presence of the TA and shall be used to calculate the total water usage.

2.7.3 The water shall be supplied from an approved municipal drinking water supply system that has been certified safe for consumption. (Reference CCG FSSM 7F12 Potable Water Quality paragraphs 3.3 Shore Supply, 3.6 Potable Water Testing).

---

**DO NOT MODIFY**

2.7.4 At the start of the contract the Contractor shall provide the TA with a copy of water test results for the potable water being supplied to the vessel showing at a minimum the following 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.

The test results must have been taken within 3 month of the start of the contract date.

2.7.5 Provisions shall be made by the Contractor to ensure that the potable water supply does not freeze during cold weather.

2.7.6 The Contractor shall supply a price quote per cubic meter of potable water. The Contractor shall also quote on supplying 10 cubic meter of potable water per day for the duration of the contract.

2.7.7 The final amount of potable water used shall be calculated from the calibrated water meter and adjusted up or down by PWGSC 1379 action.

## **2.8 Non Potable water**

The Contractor shall supply and connect a second charged waterline to the sprinkler system connection on the port aft poop deck. The connection shall be a 4 inch standard NPT male pipe connection.

## **2.9 Not Used**

## **2.10 Not Used**

## **2.11 Cranage**

2.11.1 The Contractor shall quote on the general services of a crane, including an operator and a rigger, for the support of the vessel's day-to-day activities, i.e. the moving of stores from the vessel to the Contractor's facilities ashore while the vessel is in the dry-dock. The Contractor shall quote on providing this service for 15 hours over the duration of the contract.

## **2.12 Garbage Removal**

2.12.1 A garbage container or dumpster of 5 cubic meters shall be located adjacent to the vessel. Garbage shall be removed from the vessel daily including week-ends and holidays. Ship's personnel shall comply with any recycling programs that the Contractor has in place, provided the appropriate containers are made available.

2.12.2 The Contractor shall also supply a green bin for food waste. The green bin shall also be emptied daily.

**DO NOT MODIFY**

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### **3.0 LIST OF ACRONYMS**

CA	Contract Authority (PWGSC)
CCG	Canadian Coast Guard
CLC	Canada Labour Code
CSM	Contractor Supplied Material
CSA	Canadian Standards Association
CWB	Canadian Welding Bureau
DFO	Department of Fisheries and Oceans
FSSM	Fleet Safety & Security Manual (CCG)
FSR	Field Service Representative
GSM	Government Supplied Materials
GFM	Government Furnished Materials
HC	Health Canada
IEEE	Institute of Electrical and Electronic Engineers
LOA	Length Over All
MSDS	Material Safety Data Sheet
OHS	Occupational Health and Safety
PWGSC	Public Works and Government Services Canada
SSMS	Safety & Security Management System
TBS	Treasury Board of Canada Secretariat
TCMS	Transport Canada Marine Safety
TA	Technical Authority – Owner’s Representative (CCG)
WHMIS	Workplace Hazardous Material Information System

**DO NOT MODIFY**

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#### **4.0 GENERAL PARTICULARS OF EXISTING VESSEL**

Name: CCGS Griffon

Type: Twin Screw, Medium Icebreaker / Navais Tender

Class of Voyage: Inland Waters Class I Fire Extinguishing and Lifesaving Appliances for a vessel of Class X.

Year Built: 1970

Shipbuilder: Davie Shipbuilding Ltd., Lauzon, Quebec

##### **Principal Dimensions:**

Length O.A.	234' – 0" (71.32m)
Length B.P.	214' – 0" (65.23m)
Breadth Mld.	49' – 0" (14.94m)
Depth Mld.	21' – 6" (6.55m)
Draft (Mld Design)	15' – 6 ¼" (4.73m)

##### **Tonnages:**

Gross	2211.87 L.T. (2252 Metric Tonnes)
Reg. Net	751.90 L.T. (765.56 Metric Tonnes)
Displacement 15' – 6 ¼"	2944 L.T. (2991 Metric Tonnes)
Deadweight Max	744 L.T. (757.5 Metric Tonnes)

##### **Propulsion:**

Twin screw, fixed pitch, diesel electric, total power 2x2000 S.H.P. Main machinery: four (4) Fairbanks Morse 38D8-1/8" diesel engines driving four (4) Westinghouse DC two wire single armature, non-reversing variable voltage generators.

**DO NOT MODIFY**

## **5.0 BILGE CLEANING**

### **5.1 Identification**

- 5.1.1 The Contractor shall clean all of the bilge area of the vessel's main engine room, propulsion motor room, and shaft compartment prior to the commencement of several items of work of this specification.

This bilge cleaning shall consist of a thorough cleaning of all the bilge areas in the first week of the contract and as required spot cleaning throughout the contract.

The reasons of this cleaning are:

- a. An annual cleaning for housecleaning purposes.
- b. To ensure there is no contamination of the #2 double bottom tanks.
- c. To ensure hot work can be carried out safely in the engine room, motor room, and shaft compartment.

### **5.2 References**

#### **5.2.1 Drawings:**

#### **5.2.2**

<b>Drawing Number</b>	<b>Drawing Title</b>	<b>Electronic File Name</b>
664-AF-507	General Arrangement Profile & Superstructure Decks	G05A0803.MIL.pdf
664-AF-507	General Arrangement Profile & Superstructure Decks	ASFITGA2.pdf

### **5.3 Technical**

#### **5.3.1 Initial Bilge Cleaning**

- 5.3.1.1 The Contractor shall clean all bilge areas such that they can be certified safe for entry and safe for hot work in the following locations:

- Engine Room Bilge.
- Motor Room Bilge
- Shaft Compartment Bilge

- 5.3.1.2 This certification shall be maintained for the duration of the contract.

- 5.3.1.3 All bilge cleaning shall be completed before work items in the following sections are started:

- a. Fuel Tank Cleaning and Inspection - the #2 DB tanks only of this section to prevent tank ingress of bilge contaminants.
- b. Pump Replacements - any hot work in these sections.
- c. Galley Power panel - any hot work in this section.



**DO NOT MODIFY**

- 5.3.1.4 The Contractor shall quote on removing 20 cubic meters of oily waste from the bilges prior to the start of the cleaning operation.

**5.3.2 Disposal of Liquid and Waste from the Bilges**

- 5.3.2.1 All material from the bilges shall be removed and disposed of ashore in accordance with Federal, Provincial and Municipal regulations in effect at the time of the contract. The Contractor shall provide copies of waste oil manifests showing that the materials removed from the bilges were disposed of in accordance with Federal, Provincial and Municipal regulations in effect at the time.
- 5.3.2.2 Where water or any foreign materials are allowed to ingress into the bilge as a result of subsequent work performed by the Contractor; this material shall be removed from the bilge areas prior to the close of the contract at the Contractor's expense.

**5.4 Inspection, Test and Trials**

- 5.4.1 The Contractor shall have the Technical Authority inspect the bilges for cleanliness once the work is completed.
- 5.4.2 The Contractor shall provide the Technical Authority with all copies of waste oil manifests showing the disposal of the materials removed from the vessel's bilges.

**DO NOT MODIFY**

## **6.0 FUEL TANK CLEANING AND INSPECTION (SURVEY ITEM)**

### **6.1 Identification**

- 6.1.1 The Contractor shall open, drain, clean and test the listed fuel tanks to obtain a TCMS Division III survey credit for both a hydrostatic test and internal structural inspection.
- 6.1.2 The Griffon crew has some hotwork to perform on top of the Port Settling Tank. The Contractor shall perform all necessary work to certify this tank “Safe for Hotwork”.

### **6.2 References**

- 6.2.1 Drawings:

<b>Drawing Number</b>	<b>Drawing Title</b>	<b>Electronic File Name</b>
664-AF-501	General Arrangement and Capacity Plan	G05A0807.MIL.pdf
664-120-4	Framing Plan	G05A0855.MIL.pdf
664-120-7	Fore End Framing	G05A0861.MIL.pdf
664-120-9	Watertight and Non Watertight Bulkheads Aft and Fore	G05A0865.MIL.pdf
664-120-10	Oil Stabilization Tanks	G05A0867.MIL.pdf

### **6.3 Technical**

- 6.3.1 The Contractor shall open all access covers to the fuel tanks listed in the following list. Depending on the amount of fuel remaining onboard at the time, the Contractor may need to work in conjunction with the ship’s crew to shift fuel from various fuel tanks to allow all the work in this section to be completed.

<b>Description</b>	<b>Location</b>	<b>Particulars</b>
Fuel Oil Settling Tank Port	Frames 62-67	Capacity: 41.53 L. Tons
Fuel Oil Settling Tank Center	Frames 62-67	Capacity: 43.09 L. Tons
Fuel Oil Settling Tank Stbd	Frames 62-67	Capacity: 41.53 L. Tons
Fuel Oil Day Tank	Frames 53-54	Capacity: 3.51 L. Tons
#2 Double Bottom Tank Port	Frames 48-62	Capacity: 31.58 L. Tons
#2 Double Bottom Tank Stbd	Frames 48-62	Capacity: 31.58 L. Tons

**DO NOT MODIFY**

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- 6.3.2 The Contractor shall remove any remaining fuel from the tanks and shall provide a marine chemist or other qualified person's gas free certificate stating the tanks are safe for entry and work. The Contractor shall quote on removing a total of 20 cubic meters of fuel from the tanks. The Contractor shall be responsible to arrange for the disposal of this fuel. All fuel removed from the vessel and all waste generated from the tank cleaning shall be tracked in accordance with all Federal, Provincial and Municipal regulations in effect. The Contractor shall provide disposal documentation for all generated waste to the Technical Authority.
- 6.3.3 The Contractor shall supply all materials and labor necessary to clean all internal surfaces of the Port Settling Tank such that the tanks can be ready to accept hot work.
- 6.3.4 The Contractor shall supply all materials and labor necessary to clean all internal surfaces of the tank such that the internal structures of the tanks can be inspected by the attending TCMS surveyor.
- 6.3.5 The Contractor shall notify TCMS and have the internals of the tanks inspected by the attending TCMS surveyor. The Contractor shall also notify the Technical Authority such that they may also be afforded the ability to view the internals of the fuel tanks. The Contractor shall obtain a Division III survey credit for all tanks inspected by the TCMS surveyor.
- Any defects noted or that need to be corrected based on the inspection by the attending TCMS surveyor will be done under PWGSC 1379 action.
- 6.3.6 The Contractor shall close all tank covers and shall install new Contractor supplied fiber-re-enforced neoprene gaskets for all tank covers.

#### **6.4 Tests and Trials**

- 6.4.1 All tanks that have been opened for inspection shall be hydrostatic pressure tested to a 2.5-meter (8-foot) head of water. The Contractor shall blank all suction and discharge lines, vents and sounding pipes during the test. The Contractor shall be responsible for supplying, fitting and subsequent removal of blanks. The Contractor shall empty and wipe down dry the tanks afterwards and ensure no water remains in the tanks. Pressure tests shall be witnessed by TCMS.
- 6.4.2 The Contractor shall obtain a Division III survey credit for all hydrostatic pressure tests performed on the tanks. These survey credits shall be provided to the Technical Authority prior to the completion of the contract.

**DO NOT MODIFY**

## **7.0 SPRINKLER PUMP REPLACEMENT (SURVEY ITEM)**

### **7.1 Identification**

- 7.1.1 Griffon requires replacement of the Sprinkler Pump fitted to the vessel. The existing pump and structure must be removed and a new pump and priming system must be installed including piping. The new pump and primer is Government Furnished Material (GFM). The new pump is a similar design - vertical centrifugal - but different dimensionally. The new primer is an air venture system with electric solenoids. The Contractor shall install a new air line to the primer unit. The main electrical circuitry will be reused. The circuitry shall be required to be modified to operate the new primer and pump.
- 7.1.2 The work in this section of the specification is to be completed in conjunction with Section 5- Bilge Cleaning.
- 7.1.3 The work in this specification shall be performed in conjunction with Section 8.0 Emergency Fire Pump Replacement. Both pumps will share the same primer air piping and primer electrical circuitry

### **7.2 References**

#### **7.2.1 Drawings**

- 7.2.1.1 The following drawings are provided for guidance. These drawings are not to be construed as production drawings.

<b>Drawing Number</b>	<b>Drawing Title</b>	<b>Electronic File Name</b>
664-4093-10 Sht 2	Sprinkler Piping Upper & Lower Decks & Tank Top	G05A1130.MIL Rev. 0.pdf
664-4093-10 Sht 3	Sprinkler System Piping (Details & Bill of Material)	G05A1109.MIL Rev. 1.pdf
B38691	Arrgt of Drysdale 6/4 Falcon Rotary Centrex Sprinkler Pump	B38691 Drysdale Sprinkler pump.pdf
664-4211-1	Compressed Air System	G05A1051.MIL Rev. 1.pdf
1WD68Q462-122, Sht 1 of 4	List of Equipment, Layout, Legend & NP Emergency MCC	G05322milModel(1).pdf
1WD68Q462-122, Sht 2 of 4	Power & Control Schematic Diagram -	G05322sc2Model(1).pdf

**DO NOT MODIFY**

	Emergency MCC	
IWD68Q462-122, Sht 3 of 4	Control Schematic - Emergency MCC	G05322sc3Model(1).pdf
664-M-1	Seats for Thrust Block, Turning Gear, Shaft Brake, Propulsion Motor, Diesel Engine, Propulsion & Service Generators	G05A0833.MILRev. 2.pdf
664-M1 (4 of 5)	Machinery Arrangement - Plan View - Sections	G05A1015.MIL.pdf
G05SPRPP-01	Hamworthy Sprinkler Pump Elevations	G05SPRPP-01.pdf
G05SPRPP-02	Hamworthy Sprinkler Pump Arrangement	G05SPRPP-02.pdf

**7.2.2 Manuals and Documents:**

- Peacock-Drysdale Pumps for Davie Shipbuilding, Peacock Ref. # 68DR-3270
- Instruction Manual CG Centrifugal Pump
- Manual Hamworthy PMB Primer
- Technical Datasheet for CGB100R-V048-AAN-B11K1-CNB
- SU 03395-007 CGB 100 Form 48 General Description & Outline
- SU S2487-002 Centrifugal Pump CGA, B, C Form V General Description and Parts List
- SU S3685-001 Centrifugal Pump, Type CG General Description and Parts List

**7.2.3 Regulations:**

7.2.3.1 The following standards apply specifically to this section of the specification:

- Canada Shipping Act, Fire Detection and Extinguishing Equipment Regulations- Latest version.
- Canada Shipping Act, Marine Machinery Regulations – Latest version.

**7.2.4 Materials**

7.2.4.1 New steel structural material shall be C.S.A. G40.21 Grade 44W quality plate and sections, unless otherwise specified. All piping shall be seamless steel, black pipe, Schedule 40 to A.S.T.M. Spec. A.53 Grade “A”. Material test certificates shall be a deliverable for this specification.

**DO NOT MODIFY**

### **7.3 Technical**

#### **7.3.1 Gas-Freeing and Certification of Areas for Hot Work**

7.3.1.1 The Contractor shall certify the following spaces safe for hot work:

- Lower Motor Room inclusive of bilges

#### **7.3.2 Rigging**

7.3.2.1 The Contractor shall be responsible for all materials and labor required for rigging and transporting equipment and material into and from the Lower Motor Room. Any additional lifting lugs that are required to be welded as a result of this specification are the responsibility of the Contractor. Any additional welded lifting lugs shall be approved by the Chief Engineer prior to installation. The Contractor shall be responsible for proof testing the lifting lugs to 200% the SWL prior to using them.

#### **7.3.3 Protection of Existing Equipment**

7.3.3.1 The Contractor shall exercise extreme caution and ensure that remaining electrical and mechanical equipment is well protected from the ingress of dirt, debris and water or exposure to heat. In particular, attention shall be given to all wiring and equipment in the area where the work is to be done. The Contractor is responsible for all labor and equipment required to take all necessary precautions in order to prevent damage to the surrounding fixtures and equipment.

#### **7.3.4 Sprinkler Pump Details**

##### **7.3.4.1 Existing Pump Details:**

Drysdale/Peacock 6/4 Falcon Rotary Centrex Sprinkler Pump

Unit I.D. #	J300
Capacity	501 Imp. Gall per min.
Discharge Pressure (Head)	231 feet
Suction Pipe Flange Size	6"
Discharge Pipe Flange Size	4"
Motor Make	Lawrence Scott Electromotor Ltd
Motor Model	No. M424892
Motor Frame	VD 250SBD
Motor Voltage	440 VAC, 3 PH, 60 Hz
Motor HP	66 HP
Motor Speed	1750 RPM
Motor Current	80 Amps
Connection	Star
Insulation	Class B
Rating	Continuous
Manufactured	1969

**DO NOT MODIFY**

Spec.	Lloyd's & CU 12
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**7.3.4.2 Replacement Pump Details:**

Hamworthy CG centrifugal, single suction, single stage, radially split, vertical, inline Sprinkler Pump

Unit Model #	CGB100R-V048-AAN-B11K1-CNB
Pump Serial Number	11-20466
Pump KW	40.7 KW (55 HP)
Capacity	137 cu. m./hr
Discharge Pressure (Head)	249 Feet
Total Head	70.6 m
Suction Pipe Flange Size	125 mm (4.92")
Discharge Pipe Flange Size	100 mm (3.93")
Pump Weight	145 KG (320 Lbs)
Motor Make	TECO
Motor Model	AEVBKB020060
Motor Serial	10730046823-1
Motor Frame	IP 55
Motor Voltage	460V,
Motor KW	49.5 KW
Motor Speed	3540 RPM
Motor Current	71.6 Amps
Connection	
Insulation	Class F
Rating	Continuous
Motor Weight	356 KG
Manufactured	2011
Pump Spec.	Lloyd's Cert. #SNG 1106050-1
Total pump assembly weight	501 KG

**7.3.5 Description of Fitted Installation**

- 7.3.5.1 Mechanical - The existing Sprinkler Pump is fitted in the Lower Motor room, Port side at Frame 28. It is a single stage centrifugal pump fitted with a water ring/separator priming system fitted to the suction of the pump. The pump draws suction from a dedicated Sprinkler Pump Seabox in the Lower Motor Room Port side at Frame 34 and 35, through a 6 inch globe valve mounted on the sea bay and through a 6 inch duplex strainer mounted at Deep Frame 30. The existing pump mounts are fitted to two steel channels bolted to a steel base plate measuring  $\frac{3}{4}$  inch by 34 inches long by 18 inches wide. The base plate is welded to the transverse floors at Frames 28 and 29. The base plate is shimmed 1  $\frac{1}{4}$ " at Frame 28. The base plate extends approximately 8  $\frac{3}{4}$ " inches aft of Frame 28. The forward end of the base plate also provides the support arrangement for the primer separator that is mounted to the pump suction at Frame 29.

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**DO NOT MODIFY**

The pump discharge piping is fitted with a 2" test connection to bilge. This is a regulatory requirement. Access for maintenance of this pump is from aft and accomplished by vertically splitting the pump casing.

- 7.3.5.2 Electrical - The existing Sprinkler Pump motor is powered from the Emergency MCC located in the Emergency Generator Compartment via 3 conductor cable, 440 VAC circuit 21-EP-2. It is controlled by a Klockner - Moeller AC Magnetic Reduced Voltage Autotransformer starter. The pump is operated manually from the Machinery Control Room (MCR) via a Hand/Auto switch mounted on the Sub Mimic Display or automatically by a pressure switch measuring pressure from the Sprinkler Discharge Manifold. The pressure switch is mounted locally at the pump. The pump also has a Lock-On/Stop switch mounted locally at the pump for testing and maintenance purposes. Remote indication of power available by way of a white indicator light is fitted on the Essential MCC in the MCR. Remote indication of pump running/stopped status by way of green/amber indicating lights are fitted adjacent to the Hand/Auto switch on the Sub Mimic Display in the MCR.

### **7.3.6 Strip Out Requirement**

### **7.3.7 Piping Removals**

- 7.3.7.1.1 The Contractor must ensure all piping is drained, isolated and locked out prior to removal of all piping. The Contractor shall be responsible to supply all labour and materials to remove the following existing Sprinkler Pump piping:
- The 7 foot section of 6 inch piping from pump discharge flange to Sprinkler Pump Discharge Valve. The bracket securing this pipe to the deckhead is to be reused upon installation of new piping.
  - The 6" flanged pipe spool at the outlet of the suction strainer.
  - All piping connected to the water ring primer and separator.
  - The 7 foot section of steel piping on the outlet of the 2" Test Valve is to be removed and retained on board for reuse.
  - The 2" Test Valve is to be removed and retained on board for reuse.
  - All brackets supporting the separator are to be cropped flush and removed. The pump suction flange shall be unbolted and the separator removed.
  - Disconnect and remove all Sprinkler Pump pressure gauge piping and crop and grind flush the pressure gauge mounting arrangement.
  - Disconnect and discard the copper tubing connected to the Low Pressure Switch. The pressure gauge on this line is to be retained for reuse.

### **7.3.7.2 Sprinkler Pump Electrical Removals**

- 7.3.7.2.1 The Contractor must ensure all Sprinkler Pump circuits have been isolated and locked out in accordance with the FSSM. The Contractor shall ensure all cables are identified and all wires are marked as to their intended reconnection prior to removal. The



**DO NOT MODIFY**

Contractor shall disconnect the following electrical equipment and cabling for the existing Sprinkler Pump:

- One power cable and two control cables to the Sprinkler Pump junction box and auxiliary switches are to be released from the supporting wire way, disconnected and pulled back to the deckhead and secured temporarily out of the way of the work. These cables will be reused on the new installation. The Contractor must not bend these cables in such a way as to cause damage to them.
- Remove the switch and junction boxes and retain on board for reuse.

**7.3.7.3 Sprinkler Pump Removals**

7.3.7.3.1 The Contractor must remove the Sprinkler Pump, Primer and Separator from the vessel. The Contractor is advised to break down the Sprinkler Pump into at least 4 parts (motor, pump, separator and primer) in order to facilitate easier dismounting and removal from the vessel. The Contractor shall release the Sprinkler Pump from its mount and remove it from the vessel. The pump unit shall be reassembled and returned to CG in an undamaged state at the completion of the work.

**7.3.7.4 Miscellaneous Removals**

7.3.7.4.1 The Contractor shall remove the following:

- The wire way support adjacent to the pump. The wire way support must be retained on board for reuse. Store out of the way of work.
- The Contractor shall release and discard the existing steel channel pump supports.
- All unused brackets associated with the support of Sprinkler Pump components are to be cropped and base structure ground flush.
- The Contractor must retain the 3/4" steel base plate on the supporting structure. This plate will be used to build the new pump support. It has already been shimmed at Frame 28 during the construction of the ship to align with the ship's baseline.

**7.3.8 New Pump Installation**

7.3.8.1 The Contractor shall adhere to the manufacturer's installation and all instructions concerning installation of the pump, piping, electrical and pneumatics. All deviation from the installation instructions shall be approved by the Technical Authority prior to the commencement of work.

7.3.8.2 The Contractor may use whatever method considered best for introducing the new material into the vessel and welding it in place, provided there is no damage to the surrounding structure. The Contractor shall remove the pressure gauges, piping and primer system prior to transporting the new pump. They shall be reconnected once the pump is bolted in place.

**DO NOT MODIFY**

**7.3.8.3 Mounting Arrangement**

- 7.3.8.3.1 The Contractor shall construct a support structure according to the supplied guidance drawing “Hamworthy Sprinkler Pump Arrangement”. The Contractor shall be responsible for verifying all dimensions of all scantlings, sizes and clearances on site prior to commencement of work.
- 7.3.8.3.2 The Contractor shall verify exact location where the pump is to be installed with the Chief Engineer prior to installing the supports.
- 7.3.8.3.3 The Contractor may propose alternate construction and fitting arrangements that shall be submitted for review by the Technical Authority. Any alternative arrangement shall be approved by the Technical Authority prior to implementation and be accompanied by drawings showing the intended “as fitted” arrangement.
- 7.3.8.3.4 The pump centerline shall be aligned on Frame 28 and in line with the suction strainer flange. The frame spacing in the area of installation is 24 inches on center. There are intermediate frames between the main frames 12 inches on center.
- 7.3.8.3.5 The pump shall be mounted such that the maintenance opening in the entablature of the pump is facing inboard. The recommended access clearance for maintenance in this area is 600 mm. This access clearance must be respected.
- 7.3.8.3.6 The pump shall be mounted such that the manufacturers recommended vertical clearance for the removal of the motor is respected.
- 7.3.8.3.7 The location of the motor junction box shall be facing inboard, free of obstruction and easily accessible for maintenance. The Contractor shall be responsible for orienting the motor correctly on the entablature. The Contractor shall perform alignment measurements on the pump before and after disturbing the alignment. Copies of the results shall be presented to the Technical Authority for approval prior to commissioning the pump. Rotation of the motor on it’s base shall be considered as disturbing the alignment.

**7.3.8.4 Base Support**

- 7.3.8.4.1 The Contractor must fabricate a new welded pump support frame to rigidly support the pump. The base support shall be built off and welded to the existing pump base plate. This arrangement shall be stiff to reduce vibration. The Contractor shall take into account the intended location of the pump prior to welding the support to the existing base.
- 7.3.8.4.2 The Contractor shall fabricate the pump support from ½” plate measuring 20 3/8” X 18 5/16” supported by 3” X 1/4 “ steel angle in four places. The pump support frame shall be sized such that the piping passing underneath can be withdrawn when required. The Contractor must ensure there is no distortion to the pump foundation as a result of welding. The Contractor shall ensure the pump foundation is flat.
- 7.3.8.4.3 The new pump support and all exposed steel, created as a result of removals, shall be coated with 2 coats of marine primer prior to fitting the pump.

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**DO NOT MODIFY**

### **7.3.8.5 Pump**

- 7.3.8.5.1 The Contractor shall bolt the new pump to the pump support using 7/8" non-corrosive steel fasteners, washers and lock washers. The pump has a three point attachment to the foundation. The Contractor shall ensure the foundation is free from distortion prior to bolting the pump in place.

### **7.3.8.6 Piping**

- 7.3.8.6.1 All new Sprinkler system piping shall be seamless steel, black pipe, Schedule 40 to A.S.T.M. Spec. A.53 Grade "A". All pipe fittings to be seamless steel, butt weld, schedule 40. All piping runs are to be flanged.
- 7.3.8.6.2 The Contractor shall ensure flange parallelism at the pump is within +/- 0.3 mm of a compressed gasket. Flange eccentricity shall be such that the flange bolts easily pass through both bolt holes.
- 7.3.8.6.3 All piping shall be assembled using full penetration, continuous butt welds.
- 7.3.8.6.4 All fittings shall be long radius so long as space permits.
- 7.3.8.6.5 The Contractor shall connect the 6" flange of the suction strainer to the 125 mm flange of the pump inlet. The Contractor shall ensure the piping is removable for galvanizing.
- 7.3.8.6.6 The Contractor shall connect the 100 mm flange at the pump outlet with the 6" flange of the Sprinkler Discharge Valve. The Contractor shall provide a 2" flanged branch line for reconnection of the Test Valve and piping. This is a regulatory requirement. The arrangement and orientation of the test connection shall be according to the guidance drawing provided. The end of the 2" pipe shall be directed into the bilge. The Contractor shall modify this pipe as required to ensure discharge is below the deck plating. The Contractor shall remove all sections of piping once proper piping alignment is verified.
- 7.3.8.6.7 All piping sections shall be pressure tested to 150 psi prior to being sent for galvanizing. The pressure testing is to be witnessed by the Technical Authority. All leaks are to be repaired prior to galvanizing. Where leak repairs are carried out, the piping shall be retested in the presence of the Technical Authority.
- 7.3.8.6.8 The Contractor shall send the piping for hot dip galvanizing. This is a regulatory requirement. Copies of the galvanizing report are to be provided to the Technical Authority prior to final fitting of the Sprinkler piping. All costs associated with the shipping and galvanizing of the pipes shall be at the Contractor's expense.
- 7.3.8.6.9 Piping shall be adequately supported on either side of the pump, at the Discharge Valve and at the suction strainer such that the flanges of the pump and existing equipment are not subjected to any stress. The Contractor must weld steel bracketing with bolted clamps to ensure all sections of pipe are adequately supported.

**DO NOT MODIFY**

7.3.8.6.10 The piping shall be reinstalled with appropriate fasteners for the size of flange being connected. All fasteners to be fitted with lock washers and be corrosion resistant.

7.3.8.6.11 The Contractor shall provide new 1/8" thick reinforced black neoprene rubber gaskets between flanges.

7.3.8.6.12 The Contractor shall provide two coats of marine primer to the finished piping.

**7.3.8.7 Miscellaneous**

7.3.8.7.1 The Contractor shall install new copper tubing from the pressure connection on the Sprinkler System to the Low Pressure Switch. The copper tubing shall be suitably supported to prevent vibration.

7.3.8.7.2 The Contractor shall reinstall the steel wire way and secure all Sprinkler cables to it. The Contractor shall mount the Low Pressure Switch and the Lock On/Stop Switch on the back of the wire way.

**7.3.9 New Pump Installation - Primer Installation**

**7.3.9.1 Primer - Mechanical Installation**

7.3.9.1.1 The Contractor to note all piping, fitting and hose shall be Contractor supplied to complete this section.

7.3.9.1.2 The Contractor shall connect ejector supply air to the new primer. The Griffon crew have roughed in a 3/4" air primer piping system in the Motor Room. It is composed of 3/4" seamless steel pipe and 300 lb socket weld fittings. The Contractor shall complete the piping to the Sprinkler Pump, Emergency Fire Pump (see section 7.0) and to the isolation valve for the Bilge & Ballast Pump (located on centerline adjacent to the column at frame 30 in the Motor Room), weld and pressure test this pipe to the satisfaction of the TCMSB Inspector.

7.3.9.1.3 The ship's Service Air piping shall be cut and the new primer piping branched into the existing piping. All steel piping shall be fabricated 3/4" seamless steel pipe and 300 lb socket weld black steel fittings. The exact location of the branch line to the existing system shall be determined on site in consultation with the Chief Engineer. The Contractor shall connect the new 3/4" steel piping to the pump ejector inlet air connection. The pipe shall terminate 3 ft short of the pump and be terminated with a Contractor supplied flexible rubber hose suitable for the application. The rubber hose shall be 3/4" internal diameter and have non corrosive process connections. The ejector inlet is a tapered, 3/4" BSP female thread. All fittings and hose shall be Contractor supply.

7.3.9.1.4 The Contractor shall pipe the primer ejector outlet to bilge. The piping on this connection shall be NPT threaded, Sch. 40, galvanized steel. The connection to the ejector shall be completed with a non corrosive, 1" BSP to 1" NPT adapter suitable for the application.

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**DO NOT MODIFY**

- 7.3.9.1.5 All new primer piping shall be suitable supported with steel brackets to eliminate any stress on primer components.

**7.3.9.2 Primer - Electrical Installation**

- 7.3.9.2.1 The Contractor shall install a new electrical supply for the primer circuits in the Motor Room. A new junction box has been installed on the forward bulkhead of the Motor Room to provide power to the primer circuits for the Sprinkler Pump, Emergency Fire Pump (see section 7), and a Bilge and Ballast Pump that will be installed in the future.

- 7.3.9.2.2 The Contractor shall run a new 14/2 conductor bronze armored cable from Panel EL-8, Circuit #6, 15 amp breaker to a watertight, metal junction box mounted on the forward bulkhead of the Propulsion Motor Room. Panel EL-8 is located adjacent to the forward MCR entrance door at Frame 44. The metal junction box is GFM.

The Contractor will use one of the existing pipe transits below the panel to transition to the Lower Engine Room. The cable will pass through the watertight bulkhead to the Motor Room. The Contractor shall use the existing wire transit and wire ways to run this cable. The cable shall be suitably supported along the wire way.

The Contractor shall run new 14/2 conductor bronze armored cable from the junction box to the pressostat on the Sprinkler Pump. The Contractor shall use existing wireways and ensure the cable is supported along its entire route.

The Contractor shall complete the wiring to the Primer circuit.

**7.3.10 New Pump Installation - Electrical****7.3.10.1 Electrical - General**

- 7.3.10.1.1 The Contractor shall be responsible for supplying all glands, connectors, brackets, and any other material required to secure and connect the Sprinkler pump wiring.
- 7.3.10.1.2 The new motor full load current is less than the existing motor. The Contractor shall replace the existing Klockner-Moeller Z4-130 overload relay with a new overload relay of suitable rating for the new motor. The new relay shall be GFM.

**7.3.10.2 Power Wiring :**

- 7.3.10.2.1 The Contractor shall reconnect the existing cable to the new motor.
- 7.3.10.2.2 The Contractor shall install and connect the power wiring to the new overload relay.

**7.3.10.3 Control Wiring :**

- 7.3.10.3.1 The Contractor shall connect the control circuitry to the new overload relay. The relay shall be set to trip the motor at 125% overload. The relay will be GFM.

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**DO NOT MODIFY**

**7.3.11 Commissioning**

- 7.3.11.1 The Contractor shall schedule and co-ordinate the commissioning of the Sprinkler Pump and associated equipment.
- 7.3.11.2 The pump shall not be operated until the Contractor has proven to the Chief Engineer that the suction is flooded and all air in the pump and suction piping has been bled. The Contractor shall prove to the Chief Engineer that the pump shaft can be turned by hand without binding. All other manufacture's recommendations for pre-start checks and running the pump shall be adhered to.
- 7.3.11.3 The Contractor, with the assistance of the engine room staff, will arrange a 2 hour full flow operational test of the Sprinkler pump. The Fire Main shall be used for the test. The Contractor shall remove the valve disc in the SDNR valve Sprinkler Cross-Connect and discharge water from hydrants on the Poop Deck. The test shall be done with the vessel's 2" fire hoses hooked up to at least two connections.
- 7.3.11.4 The Contractor shall verify and record the following items during commissioning:
- 1) All piping is leak free and flooded.
  - 2) The pump seal is leak free.
  - 3) The motor is bump tested and turns in the correct direction. The Contractor should note the pump start circuit has an anti-restart timer.
  - 4) The proper operation of the primer at start-up.
  - 5) The motor can be operated in Auto using the Low Pressure Switch and manually with the Hand-Auto switch.
  - 6) The motor can be stopped locally using the Lock-On/Stop Switch.
  - 7) The motor is operating within rated values.
  - 8) The pump is operating within rated values with minimum vibration.
  - 9) The Contractor shall close the discharge valve momentarily to record the closed discharge pressure. The Contractor shall note the pump will overheat rapidly when operating against a closed discharge.
  - 10) The Contractor shall record the motor full load current while the pump is operating at full flow capacity.
- 7.3.11.5 The Contractor shall reinstall the valve disc once the commissioning is complete.

**7.4 Inspection, Tests and Trials**

- 7.4.1 The Contractor shall be responsible for all labour and equipment required to perform the Sprinkler Pump Testing in the presence of the TCMSB surveyor and the Technical Authority.
- 7.4.2 The Sprinkler Pump and associated equipment shall be tested to the minimum standards as follows:
- Fire Detection and Extinguishing Equipment Regulations C.R.C, c.1422 of the Canada Shipping Act

**DO NOT MODIFY**

- 7.4.3 The Contractor must provide an Inspection and Test Plan to both the TCMS and Technical Authorities for approval prior to the commencement of all Sprinkler Pump testing.
- 7.4.4 In the case where additional lift lugs were installed, the Static Load test of 2 times SWL shall be applied and witnessed by the Technical Authority and it shall be in accordance with the Tackle Regulations of the Canada Shipping Act.

**7.5 Documentation**

- 7.5.1 The Contractor shall provide final as-fitted Sprinkler Pump and Piping Arrangement drawings.
- 7.5.2 The Contractor shall provide new drawings of the electrical installation of the pump, from Emergency MCC to the pump including all control and primer circuitry.
- 7.5.3 The Contractor shall provide the Technical Authority with copies of the readings recorded as per section Testing & Inspection of this specification item.
- 7.5.4 The Contractor shall provide a Pump Alignment Report to the Technical Authority prior to commissioning of the pump. The Report shall be in Word or Excel format.
- 7.5.5 The Contractor shall provide a copy of the Galvanizing Report to the Technical Authority prior to the final fitting of the piping.
- 7.5.6 The Contractor shall supply material test certificate for this specification to the Technical Authority.



**DO NOT MODIFY**

## **8.0 EMERGENCY FIRE PUMP REPLACEMENT (SURVEY ITEM)**

### **8.1 Identification**

- 8.1.1 CCGS Griffon requires replacement of the Emergency Fire Pump fitted to the vessel. The existing pump and structure must be removed and a new pump and priming system must be installed. The new pump and primer is Government Furnished Material (GFM). The new pump is a similar design - vertical centrifugal - but different dimensionally. The new primer is an air venturi system with electric solenoids. A new air connection to the primer will be required. The main electrical circuitry will be reused. The circuitry will require to be modified to operate the new primer and pump. Some cooling piping and deck plating in the vicinity of the new pump will require to be modified.
- 8.1.2 The work in this section of the specification is to be completed only after Section 5, Bilge Cleaning has been performed.
- 8.1.3 The work in this section shall be performed in conjunction with Section 7, Sprinkler Pump Replacement. Both pumps will share the same primer air piping and electrical circuitry.

### **8.2 References**

#### **8.2.1 Drawings**

- 8.2.1.1 The following drawings are provided for guidance. These drawings are not to be construed as production drawings.

<b>Drawing Number</b>	<b>Drawing Title</b>	<b>Electronic File Name</b>
B38690	Arrangement of Drysdale 6/4 Falcon Rotary Centrex Emergency Fire Pump	B38690 Drysdale Emergency fire pump.pdf
664-4211-1	Compressed Air System	G05A1051.MIL Rev. 1.pdf
1WD68Q462-122, Sht 1 of 4	List of Equipment, Layout, Legend & NP - Emergency MCC	G05322milModel(1).pdf
1WD68Q462-122, Sht 2 of 4	Power & Control Schematic Diagram - Emergency MCC	G05322sc2Model(1).pdf
1WD68Q462-122, Sht 3 of 4	Control Schematic - Emergency MCC	G05322sc3Model(1).pdf
664-5-1	Seats for Thrust Block, Turning Gear, Shaft Brake, Propulsion	G05A0833.MILRev. 2.pdf



**DO NOT MODIFY**

	Motor, Diesel Engine, Propulsion & Service Generators	
664-M1 (4 of 5)	Machinery Arrangement - Plan View - Sections	G05A1015.MIL.pdf
G05EFPP-01	Hamworthy Emergency Fire Pump Elevations	G05EFPP-01.pdf (Rev.2)
G05EFPP-02	Hamworthy Emergency Fire Pump Arrangement	G05EFPP-02.pdf (Rev.3)
664-9000-3 (1 of 3)	Profile & Bhds Scantlings	G05A0498MIL Part 1.pdf
664-120-9	W.T. & N.W.T. Bhds Aft & Floors	G05A0865.MIL .pdf
664-AF-501	General Arrangement and Capacity Plan	G05A0807.MIL.pdf

## 8.2.2 Manuals and Documents:

- Peacock-Drysdale Pumps for Davie Shipbuilding, Peacock Ref. # 68DR-3270
- Instruction Manual CG Centrifugal Pump
- Manual Hamworthy PMB Primer
- Technical Datasheet for CGA065R-V048-AAN-B03J1-CNB
- SU 03395-007 CGA 65 Form 48 General Description & Outline
- SU S2487-002 Centrifugal Pump CGA, B, C Form V General Description and Sectional Drawing
- SU S3685-001 Centrifugal Pump, Type CG General Description and Parts List

## 8.2.3 Regulations

- 8.2.3.1 The following standards apply specifically to this section of the specification:
- Canada Shipping Act, Fire Detection and Extinguishing Equipment Regulations - Latest Version
  - Canada Shipping Act, Marine Machinery Regulations SOR/90-264 - Latest Version

## 8.2.4 Materials

- 8.2.4.1 New steel structural material shall be C.S.A. G40.21 Grade 44W quality plate and sections, unless otherwise specified. All piping shall be seamless steel, black pipe, Schedule 40 to A.S.T.M. Spec. A.53 Grade "A" or equivalent. Material test certificates shall be a deliverable for this specification.

**DO NOT MODIFY**

### **8.3 Technical**

#### **8.3.1 Gas-Freeing and Certification of Areas for Hot Work**

- 8.3.1.1 The Contractor shall certify the following spaces safe for hot work:
- Lower Motor Room inclusive of bilges

#### **8.3.2 Rigging**

- 8.3.2.1 The Contractor shall be responsible for all materials and labor required for rigging and transporting equipment and material into and from the Lower Motor Room. Any additional lifting lugs required as a result of this specification are the responsibility of the Contractor. Any additional lifting lugs shall be approved by the Chief Engineer prior to installation. The Contractor shall be responsible for proof testing the lifting lugs to 200% the SWL prior to using them.

#### **8.3.3 Protection of Existing Equipment**

- 8.3.3.1 The Contractor shall exercise extreme caution and ensure that remaining equipment is well protected from the ingress of dirt, debris and water or exposure to heat. In particular, attention shall be given to all wiring and equipment in the area where the work is to be done. The Contractor is responsible for all labor and equipment required to take all necessary precautions in order to prevent damage to the surrounding fixtures and equipment.

#### **8.3.4 Emergency Fire Pump Details**

##### **8.3.4.1 Existing Pump Details**

Drysdale/Peacock 6/4 Falcon Rotary Centrex Emergency Fire Pump

Unit I.D. #	J298
Capacity	254 Imp. Gall per min.
Discharge Pressure (Head)	231 feet
Suction Pipe Flange Size	6"
Discharge Pipe Flange Size	4"
Motor Make	Lawrence Scott & Electromotors Ltd
Motor Model	No. M424891
Motor Frame	VD 200LBD
Motor Voltage	440 VAC, 3 PH, 60 Hz
Motor HP	40 HP
Motor Speed	1750 RPM
Motor Current	51 Amps
Insulation	Class B
Rating	Continuous

**DO NOT MODIFY**

Manufactured	1969
Spec.	CU 12SP/Lloyd's #8607

#### 8.3.4.2 Replacement Pump Details

Hamworthy CG centrifugal, single suction, single stage, radially split, vertical, inline Emergency Fire Pump

Unit Model #	CGA065R-V048-AAN-B03J1-CNB
Pump Serial Number	11-20467
Pump KW	21.6 KW (28.95 HP)
Capacity	69 cu. m./hr (253 Imp. Gall./min)
Discharge Pressure (Head)	70.4 m (231 ft)
Total Head	70.4 m (231 Ft)
Suction Pipe Flange Size	80 mm (3.15")
Discharge Pipe Flange Size	65 mm (2.56")
Pump Weight	120 KG
Motor Make	TECO
Motor Model	AEVBKB020030FMX
Motor Serial	10730046833-1
Motor Frame	IP 55
Motor Voltage	460V,
Motor KW	24.2 KW
Motor Speed	3530 RPM
Motor Current	37.2 Amps
Insulation	Class F
Rating	Continuous
Motor Weight	190 KG
Manufactured	2011
Pump Spec.	Lloyd's Cert. #SNG 1106050-2
Total pump assembly weight	308 KG

#### 8.3.5 Description of Fitted Installation

- 8.3.5.1 Mechanical - The existing Emergency Fire Pump is fitted in the Lower Motor room, approximately 60 inches off centerline to Port at Frame 25 and 26. It is a single stage centrifugal pump fitted with a water ring/separator priming system fitted to the suction of the pump. The pump draws suction from the Lower Seabox in the Lower Motor Room Port side between Frame 35 and 36, through a 5 inch globe valve and 5 inch gate valve mounted on the sea box and through a 5 inch basket strainer mounted between Frame 26 & 27. The last section of piping before the suction of the pump is nominal 6 inches. The pump discharge is connected to a 5" check valve via a 4 inch to 5 inch concentric reducer and is connected to the Fire Main via 5 inch nominal piping. The existing pump mounts are fitted to two 4 inch steel channels bolted approximately

**DO NOT MODIFY**

12 ¼" inches apart. The channels are bolted to 1" X 3" flat bar approximately 25 inches long spanning Frames 26 and 27. The flat bar is continuously welded to the tank top between Frames 25 and 26. The primer separator is supported separately by it's own arrangement welded to the tank top. Access for maintenance of this pump is from aft and accomplished by vertically splitting the pump casing.

- 8.3.5.2 Electrical - The existing Emergency Fire Pump motor is powered from the Emergency MCC located in the Emergency Generator Compartment via 3 conductor cable, 440 VAC circuit 20-EP-2. It is controlled by a Klockner - Moeller AC Magnetic Reduced Voltage Autotransformer starter. The pump is operated remotely from the Machinery Control Room (MCR) Sub Mimic Panel via Start/Stop pushbuttons. The pump also has a Local Start/stop pushbutton station mounted locally at the pump. Remote indication of power available by way of a white indicator light is fitted on the Essential MCC in the MCR. Remote indication of pump running/stopped status is by way of green/red illuminated pushbutton lights on the Sub Mimic Display in the MCR.

**Strip Out Requirement****8.3.6.1 Piping Removals**

- 8.3.6.1.1 The Contractor must ensure all piping is drained, isolated and locked out prior to removal of all piping. The Contractor shall be responsible to supply all labor and materials to remove the following existing Emergency Fire Pump piping:
- The Contractor shall remove all separator and primer piping. This is to be removed from the vessel and retained for reassembly onto the pump
  - Remove the Thrust Block cooling water pipe from the thrust block to the flanged connection under the deck plating approximately 30 inches to Stbd of centerline.

**8.3.6.2 Emergency Fire Pump Electrical Removals**

- 8.3.6.2.1 The Contractor must ensure all Emergency Fire Pump circuits have been isolated and locked out in accordance with the FSSM. The Contractor must ensure all cables are identified and all wires are marked as to their intended reconnection prior to removal. The Contractor shall disconnect the following electrical equipment and cabling for the existing Emergency Fire Pump:
- One power cable to the Emergency Fire Pump junction box is to be released from the supporting wire way, disconnected and pulled back to the deckhead and secured temporarily out of the way of the work. These cables will be reused on the new installation. The Contractor must not bend these cables in such a way as to cause damage to them.

**8.3.6.3 Emergency Fire Pump Removals**

- 8.3.6.3.1 The Contractor must remove the Emergency Fire Pump, Primer and Separator from the vessel.

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8.3.6.3.2 The Contractor is advised to break down the Emergency Fire Pump into at least 4 parts (motor, pump, separator and primer) in order to facilitate easier dismounting and removal from the vessel. The Contractor shall release the Emergency Fire Pump from it's mount and remove it from the vessel. The pump unit shall be reassembled and returned to CG in an undamaged state at the completion of the work

**8.3.6.4 Miscellaneous Removals**

8.3.6.4.1 The Contractor shall remove and discard the following:

- The lower horizontal section of wire way support mounted on the bulkhead. The vertical section of wire way must be retained.
- The support bracket for the primer separator shall be cropped approximately 1" from the tank top. The Contractor shall protect the tank top from all undue heat as a result of the cutting.
- All unused brackets associated with the support of Emergency Fire Pump and components are to be cropped and base structure ground flush.
- The Contractor must remove the deck plate and support frame on the outboard side of the pump. A new frame accommodating the new pump arrangement with removable railing shall be constructed once the pump and piping have been installed.
- Any additional removals required in order to execute the pump installation shall be the responsibility of the Contractor.
- The 1" X 3" steel flat bar and 4" steel channel sections comprising the existing pump support shall be left as fitted and reused for the new pump installation. The paint coating on the top face of the steel channel sections shall be removed and the surface prepared for welding.

**8.3.7 New Pump Installation**

8.3.7.1 The Contractor must adhere to the manufacturer's installation and all instructions concerning installation of the pump, piping, electrical and pneumatics. All deviation from the installation instructions shall be approved by the Technical Authority prior to the commencement of work.

8.3.7.2 The Contractor may use whatever method considered best for introducing the new material into the vessel and welding it in place, provided there is no damage to the surrounding structure.

8.3.7.3 The Contractor shall remove the pressure gauges, piping and primer system prior to transporting the new pump. They shall be reconnected once the pump and piping is installed.

8.3.7.4 Mounting Arrangement

8.3.7.4.1 The Contractor must construct a support structure according to the supplied guidance drawing "Hamworthy Emergency Fire Pump Arrangement". The Contractor shall be responsible for verifying all dimensions of all scantlings, sizes and clearances on site prior to commencement of work.

**DO NOT MODIFY**

- 8.3.7.4.2 The Contractor shall verify exact location where the pump is to be installed with the Chief Engineer prior to installing the supports.
- 8.3.7.4.3 The Contractor may propose alternate construction and fitting arrangements that shall be submitted for review by the Technical Authority. Any alternative arrangement shall be approved by the Technical Authority prior to implementation and be accompanied by drawings showing the intended “as fitted” arrangement.
- 8.3.7.4.4 The pump centerline shall be aligned between Frame 25 and Frame 26 and in line with the 6” flange at the inlet to the existing separator flange. The frame spacing in the area of installation is 24 inches on center.
- 8.3.7.4.5 The pump shall be mounted such that the maintenance opening in the entablature of the pump is facing outboard. The recommended access clearance for maintenance in this area is 600 mm. This clearance shall be respected.
- 8.3.7.4.6 The pump shall be mounted such that the manufacturers recommended vertical clearance for the removal of the motor is respected.
- 8.3.7.4.7 The location of the motor junction box shall be facing aft, free of obstruction and easily accessible for maintenance. The Contractor shall be responsible for orienting the motor correctly on the pump entablature. The Contractor shall perform alignment measurements on the pump before and after disturbing the alignment. Copies of the results shall be presented to the Technical Authority for approval prior to commissioning the pump. Rotation of the motor on it’s base shall be considered as disturbing the alignment.

**8.3.7.5 Base Support**

- 8.3.7.5.1 The Contractor shall install a new  $\frac{3}{4}$ ” steel plate measuring approximately 18  $\frac{1}{4}$ ” wide by 12” long spanning the existing steel channels. The plate shall be continuously fillet welded to the steel channels both sides. The plate is to be situated such that it rigidly supports the new pump pedestal.
- 8.3.7.5.2 The Contractor must fabricate a new welded pump pedestal to rigidly support the pump and provide a solid mounting surface for the pump. The pedestal shall be built off and welded to the new  $\frac{3}{4}$ ” bottom plate. The Contractor shall take into account the intended location of the pump prior to welding the pedestal to the new bottom plate. The Contractor shall fabricate the pump pedestal from steel plate according to the guidance drawing “Emergency Fire Pump Elevations”. The Contractor must ensure there is no distortion to the pump foundation as a result of welding. The Contractor shall weld the pedestal to the new bottom plate using continuous fillet welds. The Contractor shall ensure the pump foundation is flat.
- 8.3.7.5.3 The new pump support and all exposed steel, created as a result of removals, shall be coated with 2 coats of marine primer prior to fitting the pump.

**DO NOT MODIFY**

**8.3.7.6 Pump**

- 8.3.7.6.1 The Contractor shall bolt the new pump to the pump support using 7/8" non-corrosive steel fasteners, washers and lock washers. The pump has a three point attachment to the foundation. The Contractor shall ensure the foundation is free from distortion prior to bolting the pump in place.

**8.3.7.7 Piping**

- 8.3.7.7.1 All new Emergency Fire Pump piping shall be seamless steel, black pipe, Schedule 40 to A.S.T.M. Spec. A.53 Grade "A" or equivalent. All pipe fittings shall be seamless steel, butt weld, schedule 40. All piping runs shall be flanged.
- 8.3.7.7.2 The Contractor shall ensure flange parallelism at the pump is within +/- 0.3 mm of a compressed gasket. Flange eccentricity shall be such that the flange bolts easily pass through both bolt holes.
- 8.3.7.7.3 All piping shall be assembled using full penetration, continuous butt welds.
- 8.3.7.7.4 All fittings shall be long radius so long as space permits.
- 8.3.7.7.5 The Contractor shall connect the 6" flange of the existing suction piping to the 80mm flange of the pump inlet. The Contractor shall ensure the piping is removable for galvanizing.
- 8.3.7.7.6 The Contractor shall connect the 65 mm flange at the pump outlet with the 5" flange of the check valve at the discharge piping.
- 8.3.7.7.7 The Contractor shall fabricate a new Thrust Block Cooling Water pipe such that it passes free and clear of the Emergency Fire Pump and suction piping. The new piping shall be in two sections, flanged at each end.
- 8.3.7.7.8 The Contractor shall remove all sections of piping once proper piping alignment is verified. All piping sections shall be pressure tested to 100 psi prior to being sent for hot dip galvanizing. The pressure testing is to be witnessed by the Technical Authority. All leaks are to be repaired prior to galvanizing. Where leak repairs are carried out, the Contractor shall retest the piping in the presence of the Technical Authority. The Contractor shall subcontract to have the piping hot dip galvanized. This is a regulatory requirement. Copies of the galvanizing quality report are to be provided to the Technical Authority prior to final fitting of the Emergency Fire Pump piping. All costs associated with the shipping and galvanizing of the pipes shall be at the Contractor's expense.
- 8.3.7.7.9 Piping must be adequately supported on either side of the pump, at the Discharge Valve and at the suction piping such that the flanges of the pump and existing equipment are not subjected to any stress. The Contractor shall weld steel bracketing with bolted clamps to ensure all sections of pipe are adequately supported. The Contractor shall not weld on the tank top.



**DO NOT MODIFY**

8.3.7.7.10 The piping shall be reinstalled with appropriate fasteners for the size of flange being connected. All fasteners to be fitted with lock washers and be corrosion resistant. The Contractor shall provide new 1/8" thick reinforced black neoprene rubber gaskets between flanges.

8.3.7.7.11 The Contractor shall provide two coats of marine primer to the finished piping.

**8.3.7.8 Miscellaneous**

8.3.7.8.1 The Contractor shall install new copper tubing from the pressure connection on the Emergency Fire Pump to the existing pressure gauge on the bulkhead. The copper tubing shall be suitably supported to prevent vibration.

8.3.7.8.2 The Contractor shall reinstall new steel wire way and secure the existing power cable to it.

8.3.7.8.3 The Contractor shall construct a new deck plating support structure on the outboard side of the pump similar to what was existing. The scantlings of the structure shall be the same or stronger to what was existing. The orientation of the deck plating shall take into account the arrangement of the new pump. The original checker plate that was removed may be reused if required.

8.3.7.8.4 The Contractor shall fabricate and install a hand rail along the outside edge of the new deck plating. The construction of the railing shall comply with national Marine Occupational Health & Safety regulations. The railing shall be fabricated such that it can be easily removable. The size, scantlings and style of the railing shall be similar to what is fitted in other areas of the Motor Room.

**8.3.8 New Pump Installation - Primer Installation**

**8.3.8.1 Primer - Mechanical Installation**

8.3.8.1.1 The Contractor to note all piping, fitting and hose shall be supplied by the Contractor to complete this section.

8.3.8.1.2 The Contractor shall connect the new 3/4" steel piping from the vessel's service air supply that was completed in specification section 6 to the inlet connection at the ejector solenoid. The Contractor shall terminate the piping approximately 3 feet before the pump and terminate the line with a metal reinforced 3/4" rubber hose appropriate for the application. The hose shall have non corrosive fittings. All steel piping shall be fabricated 3/4" seamless steel pipe and 300 lb socket weld black steel fittings. The ejector inlet is a tapered, 3/4" BSP female thread. All new sections of steel pipe not tested as part of Section 6.0 shall be pressure tested to the satisfaction of the TCMSB Inspector.

8.3.8.1.3 The Contractor shall pipe the primer ejector outlet to bilge. The piping on this connection shall be NPT threaded, Schedule 40, galvanized steel. The connection to



**DO NOT MODIFY**

the ejector shall be completed with a galvanized, 1" BSP to 1" NPT adapter suitable for the application.

- 8.3.8.1.4 All new primer piping shall be suitable supported with steel brackets to eliminate any stress on primer components and directed to bilge.

**8.3.8.2 Primer - Electrical Installation**

- 8.3.8.2.1 The Contractor shall install a new electrical supply for the primer circuits in the Motor Room. This section shall be done in conjunction with Section 6. A new junction box has been installed on the forward bulkhead of the Motor Room to provide power to the primer circuits for the Sprinkler Pump, Emergency Fire Pump (see section 6), and a Bilge and Ballast Pump that will be installed in the future. The Contractor shall run a new 14/2 conductor bronze armored cable from the new junction box on the forward bulkhead of the Motor Room to the Danfoss pressure control. The Contractor shall use the existing wire transit and wire ways to run this cable. The cable shall be suitably supported along the wire way.

- 8.3.8.2.2 All glands, clips, ties or any other equipment required to complete the installation of the electrical supply to the primer shall be Contractor supplied material.

**8.3.9 New Pump Installation - Electrical**

**8.3.9.1 Electrical - General**

- 8.3.9.1.1 The Contractor shall be responsible for supplying all glands, connectors, brackets, and any other material required to secure and connect the Emergency Fire Pump wiring.
- 8.3.9.1.2 The new motor full load current is less than the existing motor. The Contractor shall replace the existing Klockner-Moeller Z4-80 overload relay with a new overload relay of suitable rating for the new motor. The new relay shall be GFM.

**8.3.9.2 Power Wiring**

- 8.3.9.2.1 The Contractor shall reconnect the existing cable to the new motor.
- 8.3.9.2.2 The Contractor shall install and connect the power wiring to the new overload relay.

**8.3.9.3 Control Wiring**

- 8.3.9.3.1 The Contractor shall connect the control circuitry to the new overload relay. The relay shall be set to trip the motor at 125% overload. The relay will be GFM.

**8.3.10 Commissioning**

- 8.3.10.1 The Contractor shall be responsible to schedule and co-ordinate the commissioning of the Emergency Fire Pump and associated equipment.

**DO NOT MODIFY**

- 8.3.10.2 The pump shall not be operated until the Contractor has proven to the Chief Engineer that the suction is flooded and all air in the pump and suction piping has been bled. The Contractor shall prove to the Chief Engineer that the pump shaft can be turned by hand without binding. All other manufacture's recommendations for pre-start checks and running the pump shall be adhered to.
- 8.3.10.3 The Contractor, with the assistance of the vessel's staff, will arrange a 2 hour full flow operational test of the Emergency Fire Pump. The vessel's Fire Main shall be used for the test. The Contractor shall hook up fire hoses and nozzles to at least 5 hydrants on the Poop Deck. The test shall be done with the vessel's 2" fire hoses.
- 8.3.10.4 The Contractor shall verify and record the following items during commissioning:
- 1) All piping is leak free and flooded.
  - 2) The pump seal is leak free.
  - 3) The motor is bump tested and turns in the correct direction.
  - 4) The proper operation of the primer at start-up.
  - 5) The motor can be operated locally and remotely from the MCR Sub-Mimic panel.
  - 6) The motor can be stopped locally and remotely from the MCR Sub-Mimic Panel.
  - 7) The motor is operating within rated values.
  - 8) The pump is operating within rated values with minimum vibration..
  - 9) The Contractor shall close the discharge valve momentarily to record the closed discharge pressure. The Contractor shall note the pump will overheat rapidly when operating against a closed discharge.
  - 10) The Contractor shall record the motor full load current while the pump is operating at full flow capacity.
  - 11) The Contractor shall take motor current readings at increments of 10 psi discharge pressure up to maximum discharge pressure and develop a pump curve to submit to the Technical Authority.

#### **8.4 Inspection, Tests and Trials**

- 8.4.1 The Contractor shall be responsible for all labor and equipment required to perform the Emergency Fire Pump Testing in the presence of the TCMS and Technical Authority.
- 8.4.2 The Contractor must provide an Inspection and Test Plan to both the TCMSB Inspector and Technical Authority for approval prior to the commencement of all Emergency Fire Pump testing.
- 8.4.3 The Emergency Fire Pump and associated equipment shall be tested to the minimum standards as follows:
- Fire Detection and Extinguishing Equipment Regulations C.R.C, c.1422 of the Canada Shipping Act, Schedule II.
- 8.4.4 The Contractor shall consult with the TCMSB Inspector and elaborate in the Inspection and Test Plan the specific requirements to be tested. As a minimum, the Contractor shall test for the throw capability of fire hoses and nozzles fitted to two separate hydrants

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**DO NOT MODIFY**

while being supplied by the Emergency Fire Pump. The throw must be at least 12 m at each hose nozzle. Also, as a minimum, the maximum pressure at the Emergency Fire Pump discharge with all hydrants closed shall be determined.

- 8.4.5 In the case where additional lift lugs were installed, the Static Load test of 2 times SWL and it shall be in accordance with the Tackle Regulations of the Canada Shipping Act.
- 8.4.6 The Contractor shall be responsible for testing the new railing in the presence of the TCMS and Technical Authority. All material and labor required to perform this test shall be the responsibility of the Contractor. The new railing adjacent to the Emergency Fire Pump shall be subjected to a side load equal to 250 lbs at it's weakest point.

## **8.5 Documentation**

- 8.5.1 The Contractor shall provide final as-fitted Emergency Fire Pump and Piping Arrangement drawings.
- 8.5.2 The Contractor shall provide new drawings of the electrical installation of the pump, from Emergency MCC to the pump including all control and primer circuitry.
- 8.5.3 The Contractor shall provide the Technical Authority with copies of the readings recorded as per section Testing & Inspection of this specification item.
- 8.5.4 The Contractor shall provide a Pump Alignment Report to the Technical Authority prior to commissioning of the pump. The Report shall be in Word or Excel format.
- 8.5.5 The Contractor shall provide a copy of the Galvanizing Report to the Inspection & Technical Authority prior to the final fitting of the piping.
- 8.5.6 The Contractor shall supply material test certificate for this specification to the Technical Authority.

**DO NOT MODIFY**

## **9.0 PROPULSION COOLING WATER PUMP REPLACEMENT (SURVEY ITEM)**

### **9.1 Identification**

- 9.1.1 CCG Griffon requires replacement of two Propulsion Cooling Water pumps fitted to the vessel. The existing pumps and bases must be removed and new pump assemblies with bases must be installed. The new pump assemblies are Government Furnished Material (GFM). The new pumps are identical to the existing pumps - horizontal centrifugal. The main electrical circuitry will be reused. The overload relay shall be changed out by the Contractor with a new (GFM) relay.
- 9.1.2 The work in this section of the specification is to be completed only after Section 5, Bilge Cleaning has been performed.

### **9.2 References**

#### **9.2.1 Drawings**

- 9.2.1.1 The following drawings are provided for guidance. These drawings are not to be construed as production drawings.

<b>Drawing Number</b>	<b>Drawing Title</b>	<b>Electronic File Name</b>
664-M1 sh1 Rev.5	Machinery Arrangement-Plan View-Lower Level	664-M1 sh1 of 5.pdf
664-4207-1	Raw Water Circulating Diagram	G05A1045.MIL Rev.1.pdf
664-4207-10 sh1	Raw & Fresh Water Circulating Piping Arrangement	G05A1096.MIL Rev. 2.pdf
1WD68Q462-122, Sht 1 of 4	List of Equipment, Layout, Legend & NP - Emergency MCC	G05322mi1Model(1).pdf
1WD68Q462-122, Sht 2 of 4	Power & Control Schematic Diagram - Emergency MCC	G05322sc2Model(1).pdf
IWD68Q462-122, Sht 3 of 4	Control Schematic - Emergency MCC	G05322sc3Model(1).pdf
Section 340/360 Page 206, Dated: March 2004	Dimensional Drawing Aurora 344A & 364A Pumps	Dimensions.pdf

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**DO NOT MODIFY**

**9.2.2 Manuals and Documents:**

- Pump Curve #212109 (Electronic File: 2386260-1.pdf)
- Pump Curve #212110 (Electronic File: 2386260-2.pdf)
- Instruction Manual - Installation Frame Mounted, Section 2, Item 2, Dated July 1991 (Electronic File: Install Manual.pdf)
- Instruction Manual - Operation Centrifugal Pump, Section 4, Item 1. (Electronics File: Operating Manual.pdf)

**9.2.3 Regulations**

- 9.2.3.1 The following standards apply specifically to this section of the specification:
- Canada Shipping Act, Marine Machinery Regulations SOR/90-264 – Latest Version

**9.2.4 Materials**

- 9.2.4.1 New steel structural material shall be C.S.A. G40.21 Grade 44W plate and sections, unless otherwise specified. All piping shall be seamless steel, black pipe, Schedule 40 to A.S.T.M. Spec. A.53 Grade “A” or equivalent. Material test certificates shall be a deliverable for this specification.

**9.3 Technical**

**9.3.1 Gas-Freeing and Certification of Areas for Hot Work**

- 9.3.1.1 The Contractor shall certify the following spaces safe for hot work:
- Lower Motor Room inclusive of bilges

**9.3.2 Rigging**

- 9.3.2.1 The Contractor shall be responsible for all materials and labor required for rigging and transporting equipment and material into and from the Lower Motor Room.

**9.3.3 Protection of Existing Equipment**

- 9.3.3.1 The Contractor shall exercise extreme caution and ensure that remaining equipment is well protected from the ingress of dirt, debris and water or exposure to heat. In particular, attention shall be given to all wiring and equipment in the area where the work is to be done. The Contractor is responsible for all labor and equipment required and take all necessary precautions in order to prevent damage to the surrounding fixtures and equipment.

**DO NOT MODIFY**

### 9.3.4 Propulsion Cooling Water Pump Details

#### 9.3.4.1 Existing Pump Details

Aurora Frame Mounted Horizontal Centrifugal Pump

Pump Location	Upper	Lower
Unit I.D. #	668-8905-2	668-8905-1
Make	Aurora	Aurora
Model	GBPA-BF	GBPA-BF
Size (inches)	2.5 X 3 X 9	2.5 X 3 X 9
Motor Make	CGE	CGE
Motor Model	117901	117901
Motor No.	977499	977500
Motor Frame	254	254
Motor Voltage	440 VAC, 3 PH, 60 Hz	440 VAC, 3 PH, 60 Hz
Motor HP	7.5 HP	7.5 HP
Motor Speed	1760 RPM	1760 RPM
Motor Current	10 Amps	10 Amps
Insulation	Class B	Class B
Rating	Continuous	Continuous

#### 9.3.4.2 Replacement Pump Details

Aurora Model 364A End Suction Horizontal Centrifugal Pump

Frame Data plate	Pump 1	Pump 2
Nat. Proc. Equip. Base #	379568A	379568A
Type	364 BF	364 BF
Capacity GPM	330	330
Head (Feet)	71.5	71.5
Size (inches)	2.5 X 3 X 9	2.5 X 3 X 9
RPM	1750	1750
Pump Type	364 A AB	364 A AB
Pump No.	11-2023181-2	11-2023181-1
Pump Size	2.5 X 3 X 9	2.5 X 3 X 9
Motor Make	WEG	WEG
Motor Model	W21 CC029A Severe Duty	W21 CC029A Severe Duty
Motor Serial	1008413764	100841359
VJP Part #	HT010404P	HT010404P
Motor Frame	215 T IP 55	215 T IP 55
Motor Voltage	460V, 3 Ph, 60 Hz	460V, 3 Ph, 60 Hz
Motor KW	10 HP (7.5 KW)	10 HP (7.5 KW)

**DO NOT MODIFY**

Motor Speed	1760 RPM	1760 RPM
Motor Current	12.8 Amps	12.8 Amps
Enclosure	TEFC	TEFC
Insulation	Class F	Class F
Rating	Continuous	Continuous
Motor Weight	156 lbs	156 lbs
Manufactured	July 6, 2010	July 6, 2010
Pump Spec.	ABS Certified	ABS certified

**9.3.5 Description of Fitted Installation**

- 9.3.5.1 Mechanical - The existing Propulsion Motor Cooling Water Pumps are fitted in the Lower Motor room, at the Stbd side of the hull between Frames 27 and 29. They are fitted in tandem. They are end suction, single stage, frame mounted, horizontal centrifugal pumps coupled to CGE Induction Motors via a flexible coupling. The whole assembly is mounted on C15 X 33. The channels are welded to cranked steel plate that is rigidly supported by steel brackets welded to the ship's frames. The pumps draw suction from the Motor Room Seabay between Frame 36 and 37, through a 4 inch angle globe valve mounted on the seaybay forward of the Starboard Propulsion Motor. Both pumps are fed by the same common pipe and then split before the suction of each pump. The last section of piping before the suction of the pump is nominal 5 inches with an eccentric reducer fitted at the pump suction. The pump discharge piping is nominal 4 inch. The Steel channel base frames measuring 15 inches wide by 38 inches long.
- 9.3.5.2 Electrical - The existing Propulsion Cooling Water Pumps are powered from the Emergency MCC located in the Emergency Generator Compartment via 3 conductor cable, 440 VAC circuit 10-EP-2 (Working -Upper) and 11-EP-2 (Standby - Lower). It is controlled by a Klockner - Moeller AC Magnetic starter. The pump is operated remotely from the Machinery Control Room (PTB) Propulsion Auxiliary & Exciter Transfer Board via Start/Stop pushbuttons. The pump also has a Local Lock off/start pushbutton station mounted locally at the pump. Remote indication of power available by way of a white indicator light is fitted on the Essential MCC (ESM) in the MCR. Remote indication of pump running/stopped status is by way of green/red illuminated pushbutton lights on the PTB and on the Main Mimic Display (MMD) in the MCR. The pumps are also controlled by a pressure switch such that the standby pump may start should the working pump fails.

**Strip Out Requirement****9.3.6.1 Pump Removals**

- 9.3.6.1.1 The Contractor must ensure all equipment is drained, isolated and locked out electrically and mechanically prior to removal of all piping and pumps.



**DO NOT MODIFY**

9.3.6.1.2 The Contractor shall be responsible for all labor and materials to remove the existing Propulsion Cooling Water Pumps.

9.3.6.1.3 The Contractor shall remove the following on both pumps:

- Disconnect and remove the copper tubing for the suction and discharge gauges.
- Disconnect and remove the copper tubing to the pressure switches.
- Unbolt the suction flanges at the pump.
- Unbolt and remove the pipe spools on the discharge of the pump.
- Power cable to the motor junction box is to be released from the supporting wire way, disconnected and pulled back to the deckhead and secured temporarily out of the way of the work. These cables will be reused on the new installation. The Contractor must not bend these cables in such a way as to cause damage to them. The Contractor must ensure all cables are identified and all wires are marked as to their intended reconnection prior to removal.
- Crop and remove a 4 foot section of 3 inch angle supporting the adjacent deck plating. This will provide access to the welds on the lower pump base. The aluminum deck plating is to be removed and retained and reused. The Contractor is responsible for all temporary platforms required while this angle is removed.
- Grind off the welds on the pumps base and remove the pumps assemblies complete with the steel channel base to the Upper Deck. The existing pump assemblies are to be moved to the Upper Deck, retained by the Contractor and handed over to CG at the completion of work in good working order.
- All additional removals required in order to execute the pump installation shall be the responsibility of the Contractor.

### **9.3.7 New Pump Installation**

9.3.7.1 The Contractor must adhere to the manufacturer's installation and all instructions concerning installation of the pump, piping and electrical. All deviation from the installation instructions shall be approved by the Technical Authority prior to the commencement of work.

9.3.7.2 The Contractor may use whatever method considered best for introducing the new material into the vessel and welding it in place, provided there is no damage to the surrounding structure.

9.3.7.3 The new pump assemblies are loose and require fitting on bases new bases which are identical dimensionally to the bases being removed. The new pump bases are Government Furnished Material C15 X 33.9 steel channel measuring 15 inches wide by 38 inches long. The Contractor shall fit and stitch weld in place the new 15 inch wide steel channels in a similar location and orientation to the old bases taking into account the alignment of the pump with the existing piping. The schedule of welding shall be such there is no distortion to the pump base.



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**DO NOT MODIFY**

- 9.3.7.4 The Contractor may propose alternate construction and fitting arrangements that shall be submitted for review by the Technical Authority. Any alternative arrangement shall be approved by the Technical Authority prior to implementation and be accompanied by drawings showing the intended “as fitted” arrangement.
- 9.3.7.5 The Contractor shall ensure the pumps 15 inch bases are flat prior to bolting down the pumps.
- 9.3.7.6 The Contractor shall apply two coats of marine primer to the new pump base once all welding is completed.
- 9.3.7.7 The Contractor shall fit the new pumps to the new 15 inch bases taking into account the alignment between pump and piping. The pump centerline shall be aligned with the centerline of the pump suction piping and shall be in the center of the pump base. The pumps shall be bolted to their bases with the new fasteners that were provided with the pump.
- 9.3.7.8 The Contractor shall be responsible for fabricating and installing new pipe spools at the pump discharge. All new pipe shall be seamless steel, black pipe, Schedule 40 to A.S.T.M. Spec. A.53 Grade “A” or equivalent. All pipe fittings shall be seamless steel, butt weld, schedule 40. All piping runs shall be flanged. The new pipe spools shall be fitted such that the pump is not subjected to stress from misalignment.
- 9.3.7.9 The Contractor shall ensure flange parallelism at the pump is within +/- .012” of a compressed gasket. Flange eccentricity shall be such that the flange bolts easily pass through both bolt holes.
- 9.3.7.10 The new pipe spools shall be removed and pressure tested to 100 psi prior to being galvanized. The pressure testing is to be witnessed by the Inspection and Technical Authority. All leaks are to be repaired prior to galvanizing. Where leak repairs are carried out, the Contractor shall retest the piping in the presence of the Technical Authority. The Contractor is responsible for all labor and materials in order to perform the tests. The Contractor shall have the new piping hot dip galvanized. Copies of the galvanizing report shall be a deliverable. All costs associated with the shipping and galvanizing of the pipes shall be at the Contractor’s expense.
- 9.3.7.11 The Contractor shall install the new pipe spools with new 1/8” reinforced neoprene gasket material and new non-corrosive fastener of the appropriate size for the flanges being connected. All fasteners to be fitted with lock washers and be corrosion resistant. The Contractor shall provide new 1/8” thick reinforced black neoprene rubber gaskets between flanges.
- 9.3.7.12 The pump mounting feet shall be drilled and dowelled in place once the piping is connected to the pumps. The dowels shall be installed in such a way that they will not weaken the pump mounting feet and are removable. The dowels shall be tapered.
- 9.3.7.13 The Contractor shall align and bolt down the new motors to the pumps with the new fasteners. The motors shall be aligned to the pumps using new, non-corrosive, metal shims commercially designed for that purpose. All alignment shall be performed according to and within the specifications of the manufacturers’ recommendations.

**DO NOT MODIFY**

- 9.3.7.14 The Contractor shall perform alignment measurements between motor and pump for both installations. Copies of the results shall be presented to the Technical Authority for approval prior to commissioning the pump. The alignment reports shall be a deliverable for this specification.
- 9.3.7.15 The Contractor shall reconnect the power wiring for each motor. All connectors, clips, ties, etc. are the responsibility of the Contractor.
- 9.3.7.16 The full load amperage of the new motors is higher than the original motors. The Contractor shall remove the existing overload relay from the motor control center for the pumps and install new overload relays. The overload relays are to be set to trip at 125% of motor full load current. The new overload relays are GFM.
- 9.3.7.17 The Contractor shall install new copper tubing to all the suction and discharge pressure gauges and both pressure switches. The copper tubing shall be suitably supported to prevent vibration.
- 9.3.7.18 The Contractor shall reinstall the deck plating support structure on the inboard side of the pump similar to what was existing. The scantlings of the structure shall be the same to what was existing. The orientation of the deck plating shall take into account the arrangement of the new pump. The original checker plate that was removed may be reused if required. All new steel and bare steel surfaces shall be painted with two coats of marine primer.
- 9.3.7.18.1 The Contractor shall provide two coats of marine primer to the finished piping.

**9.3.8 Commissioning**

- 9.3.8.1 The Contractor shall be responsible to schedule and co-ordinate the commissioning of the Propulsion Motor Cooling Water Pump and associated equipment.
- 9.3.8.2 The pump shall not be operated until the Contractor has proven to the Chief Engineer that the suction is flooded and all air in the pump and suction piping has been bled. The Contractor shall prove to the Chief Engineer that the pump shaft can be turned by hand without binding. All other manufacture's recommendations for pre-start checks and running the pump shall be adhered to.
- 9.3.8.3 The Contractor, with the assistance of the vessel's crew, will arrange a 2 hour full flow operational test of each Propulsion Motor Cooling Water Pump. The vessel's system shall be used for the test.
- 9.3.8.4 The Contractor shall verify and record the following items during commissioning:
- 1) All piping is leak free and flooded.
  - 2) The pump seal is leak free.
  - 3) The motor is bump tested and turns in the correct direction.
  - 4) The motor can be operated locally at the pump and remotely from the MCR (PTB) Propulsion Auxiliary & Exciter Transfer Board.
  - 5) The motor is operating within rated values.
  - 6) The pump is operating within rated values with minimum vibration.

**DO NOT MODIFY**

- 7) The Contractor shall close the discharge valve momentarily to record the closed discharge pressure and motor current. The Contractor shall note the pump will overheat rapidly when operating against a closed discharge.
- 8) The Contractor shall record the motor full load current while the pump is operating at full flow capacity.
- 9) The Contractor shall take motor current readings at increments of 10 psi discharge pressure up to maximum discharge pressure and develop a pump curve to submit to the Technical Authority.
- 10) The Contractor shall ensure the pressure switch operation of the standby pump when the duty pump is stopped.

**9.4 Inspection, Tests and Trials**

- 9.4.1 The Contractor shall be responsible for all labor and equipment required to perform the Propulsion Motor Cooling Water testing in the presence of the TCMSB Inspection Authority and the Technical Authority.
- 9.4.2 The Contractor shall review all weld quality requirements and defect limits of applicable codes and standards prior to starting any work. The Contractor shall also formulate an "Inspection and Test Plan" in co-operation with the Technical Authority and not conceal welds until they have been inspected, tested and witnessed by the Technical Authority and the attending TCMS Inspector where required. The Contractor shall afford the Technical Authority and TCMS the opportunity to witness all welds during early stages of welding procedures in accordance with AWS W1. The Contractor shall repair or replace all defects as required by code and as specified herein. Re-inspection and re-testing of welds due to poor workmanship shall be at the Contractor's expense.
- 9.4.3 In addition to the regulatory tests, the completed Propulsion Motor Cooling Water Pump installation shall be functionally tested to prove correct operation as set out by the pump manufacturer in the presence of the TCMS Inspector.
- 9.4.4 In the case where additional lift lugs were installed, the Static Load test of 2 times SWL must be applied to the lugs and it shall be in accordance with the Tackle Regulations of the Canada Shipping Act. Proof of testing shall be made a deliverable for this specification.

**DO NOT MODIFY**

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## **10.0 LIFTING POINT INSTALLATION**

### **10.1 Identification**

- 10.1.1 The Griffon is in the process of testing and certifying all shipboard lifting points for TCMS. CCG wishes to install some 10 lifting points in the engine room at various locations.
- 10.1.2 Lifting Points will be GFM.
- 10.1.3 For bidding purposes the Contractor shall quote the services of a certified welder for 10 hours.

### **10.2 References**

- 10.2.1 Regulations: Transport Canada Marine Safety - Tackle Regulations C.R.C. Chapter 1494 – Latest Version.

### **10.3 Technical**

- 10.3.1 The Contractor shall provide a certified welder to weld the lifting points to the deckhead framing of the engine room.
- 10.3.2 The vessel's engine room staff shall provide fire watch personnel as required.
- 10.3.3 The point locations will be determined by the Technical Authority. The points will be certified for a SWL of 1.5 Tons (i.e. they will be load tested to twice the SWL).

### **10.4 Inspection Test and Trails**

- 10.4.1 The Contractor shall arrange for the local TCMS inspector to witness a load test of the lifting points.
- 10.4.2 The Griffon ER crew will load test each point with a pull of 6000 lbs utilizing the vessel's test equipment. Test documentation will be done by the Technical Authority.

**DO NOT MODIFY**

## **11.0 REPAIR OF MIRANDA DAVIT SHEAVES**

### **11.1 Identification**

- 11.1.1 The Griffon crew will remove the eleven (11) sheaves of the Miranda davit.
- 11.1.2 The sheave bushings and pins are damaged and require renewal. The eleven sheaves and pins will be placed on the dock. 10 pins are identical - roughly 4" long x 2" diameter (note: vernier readings indicate the pins are machined 1.975" so 2" stock should work - this is to be verified by the Contractor at vessel viewing). The 11th pin is for the top double sheave and is longer at roughly 7". The diameter is the same as the other pins.

### **11.2 REFERENCES**

- 11.2.1 Drawings:

<b>Drawing No.</b>	<b>Drawing Title.</b>	<b>Electronic File No.</b>
35117	General Arrangement MRT 3900 (STBD Side)	Miranda Davit Drawing 35117.pdf

### **11.3 Technical**

- 11.3.1 The Contractor shall remove the sheaves from the Griffon dock and deliver them to the repair facility.
- 11.3.2 The Contractor shall supply 431 stainless steel material and all labour to machine new pins.
- 11.3.3 The Contractor shall supply bearing bronze (SAE 660) and all labour to machine new bushings.
- 11.3.4 The Contractor shall remove the old bushings from the sheaves.
- 11.3.5 The Contractor shall install and finish machine the new bushings in the sheaves. Clearances to be determined by the Contractor in consultation with the Technical Authority based upon measurements taken from the fitted pins and bushings.
- 11.3.6 The Contractor shall machine new pins and install new grease fittings in the pins.
- 11.3.7 The Contractor is to return the repaired sheaves and new pins to the Griffon dock.
- 11.3.8 The Griffon's crew will re-assemble the davit. The old pins to be returned to the Coast Guard.

### **11.4 Documentation**

- 11.4.1 The Contractor shall provide documentation certifying the type of materials used in the repair (i.e. pin and bushing material).

**DO NOT MODIFY**

- 11.4.2 The Contractor shall also supply a final data sheet identifying all bushings and pin internal and external diameters taken at a minimum of 2 places on either side of the grease groove.
- 11.4.3 The Contractor shall provide a detailed drawing of the two pin types. The drawing shall be of sufficient detail to be used as a construction drawing.

**DO NOT MODIFY**

## **12.0 RELOCATION OF GALLEY POWER PANEL (SURVEY ITEM)**

### **12.1 General**

12.1.1 TCMS has determined that the fitted installation of the galley distribution panel PCC-1 is unsafe and this panel must be re-located. All work to be as per supplied TCMS approved drawing.

### **12.2 Gas Freeing and Certification for Hot Work**

12.2.1 The Contractor shall certify the following safe for hot work:

- Upper and lower motor room.
- MCR
- Galley.

### **12.3 References**

#### **12.3.1 Drawings:**

Drawing No.	Drawing Title.	Electronic File No.
(TCMS APPROVED Drawing) 780022 Rev E	CCGS Griffon 240 Volt Distribution Panels	780022 rev E.pdf
CMG05-246-M1 Sh 3/3	Griffon Structural Fire Protection	Griffon Structural Fire Protection.pdf

#### **12.3.2 Regulations:**

12.3.2.1 TCMS - Electrical Standards - TP127E – Latest Version

12.3.2.2 TCMS - Guide to Structural Fire Protection - TP11469E – Latest Version

#### **12.3.3 Documentation:**

12.3.3.1 TCMS supplied SI-07 deficiency notice copy

## **12.4 Technical**

### **12.4.1 Fitted Installation**

12.4.1.1 The 240 volt galley power panel PCC-1 is located in the galley under the steam table. Feed for PCC-1 comes from Galley Panel NP-31 via cable 12-NP-31.  
The circuits fed from PCC-1 are:  
1. Port food wells of steam table. (40 amp breaker)

**DO NOT MODIFY**

2. Hot water urn. (30 amp breaker)
3. Starboard food wells of the steam table. (15 amp breaker)
4. Starboard 240 volt galley receptacle (15 amp breaker).
5. Plate Warmer ( 15 amp breaker)
6. Port 240 volt galley receptacle (15 amp breaker).
7. Warming Light (15 amp breaker).
8. Spare (15 amp breaker).
9. Aft 240 volt crew's mess receptacle (15 amp breaker).
10. Spare (15 amp breaker).
11. Forward 240 volt crew's mess receptacle (15 amp breaker).

12.4.1.2 The supply cable (12-NP-31) from NP-31 to PCC-1 transits as follows:

- a. Down from NP-31 through the main deck at frame 18 via a deck stand pipe.
- b. Forward through the aft motor room bulkhead at frame 24 via a multi-cable transit.
- c. Through the motor room forward at the deckhead via cable trays.
- d. Through the forward motor room bulkhead at frame 37 via a single pipe transit in to the deckhead space of the Machinery Control Room (MCR).
- e. From the MCR deckhead up through the main deck via a single pipe transit to the plinth space under the steam table. In to PCC-1 at that location.

**12.4.2 Strip Out Requirements**

- 12.4.2.1 The Contractor is to disconnect the cabling to PCC-1 and remove the power panel - this panel will be re-located.
- 12.4.2.2 The Contractor shall strip back the feed wire 12-NP-31 in to the motor room area - this cable will be re-used.
- 12.4.2.3 The following cables from PCC-1 will be stripped out:
1. Port food wells of steam table.
  2. Hot water urn.
  3. Starboard food wells of the steam table.
  4. Plate Warmer
  5. Warming Light
- 12.4.2.4 The following cables from PCC-1 will be re-used as they cannot be stripped out:
1. Starboard galley receptacle.
  2. Port galley receptacle.
  3. Aft crew's mess receptacle.
  4. Forward crew's mess receptacle.

**12.4.3 Relocation of the Panel**

- 12.4.3.1 The PCC-1 is to be re-located to the forward motor room bulkhead - at frame 37.



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**DO NOT MODIFY**

12.4.3.2 The Contractor shall locate the panel approximately 5 feet off the centerline to port. The Contractor shall mount the panel with angle iron stand-offs welded to the bulkhead. The feed cable 12-NP-31 will not be able to reach the new location of PCC-1. The Contractor is to supply, install, and mount a suitably sized NEMA 4 rated junction box in the motor room on the deckhead framing. The feed cable 12-NP-31 will be terminated in this junction box. The Contractor shall supply and install a new approved three conductor two gauge cable from the new junction box to the PCC-1 panel as per TCMS approved drawings. Watertight cable glands are to be used at the new junction box.

**12.4.4 Installation of Two New Transits**

- 12.4.4.1 The Contractor shall install two new Roxtec cable transits - the transits are GFM. The transit frames are mild steel and are to be welded in place.
- 12.4.4.2 One transit will be installed above and outboard of the watertight door on the forward motor room bulkhead (frame 37). Two low voltage communication cables will have to be disconnected in the motor room and stripped back in to the MCR prior to transit installation. After installation the cables are to be re-run and connected via the new transit.
- 12.4.4.3 The second transit is to be installed in the main deck under the steam table at the same location as the pipe transit used for cable 12-NP-31. The bottom of the cabinet under the steam table may have to be cut away to install this transit. CCG will supply stainless sheet metal to repair this cabinet after all work is completed. After all cabling has been run the Contractor shall pack these transits and the transits are to be presented to the TCMS surveyor.

**12.4.5 Running of New Cabling**

- 12.4.5.1 The Contractor shall identify all new cabling and wires with the circuit designation at all points of connection. Tags shall be of metal compatible with the armor or cable sheathing. Both ends of the tags shall be strapped to the cable with compatible metal strap after all painting has been completed. Straps shall pass through holes in the tags so that tags are positively secured. Strap ends shall be permanently folded and crimped. Adhesives of any kind will not be acceptable.
- 12.4.5.2 The Contractor shall be responsible for installing any new cableways required.
- 12.4.5.3 The Contractor shall supply new TCMS approved cabling of appropriate size through the new transits to the following loads:
1. Port food wells of steam table.
  2. Hot water urn.
  3. Starboard food wells of the steam table.
  4. Plate Warmer.
  5. Warming Light.
- 12.4.5.4 Due to the load cables to receptacles running behind bulkhead panels these cables will be retained and terminated in a junction box under the steam table. The Contractor

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shall supply and install a new Nema-4 junction box under the steam table. This JB is to be as small as possible to incorporate 4 circuits:

1. Starboard 240 volt galley receptacle
2. Port 240 volt galley receptacle
3. Aft 240 volt crew's mess receptacle (not used)
4. Forward 240 volt crew's mess receptacle (not used)

12.4.5.5 Two new cables are to be run to the junction box from the re-located PCC-1 to feed the two galley receptacles (toasters). The two crew's mess circuits will be terminated in the JB and labeled - these circuits will not be powered.

12.4.5.6 All cables entering the new JB will utilize WT glands.

## **12.5 Inspection Test and Trails**

12.5.1 The Contractor shall perform an insulation test on all new cabling. The results will be incorporated in Megger Report delivered as part of this specification.

12.5.2 The Contractor shall present the final installation to the local TCMS Surveyor for approval prior to replacement of any deckhead panels or covers.

## **12.6 Documentation**

12.6.1 The Contractor shall update drawing 780022 Rev E to indicate changes, additions (junction boxes), wire numbers, cable sizes, etc. Drawings to be provided as per section 1.13.

12.6.2 The Contractor shall ensure that TCMS agrees the new installation rectifies the SI - 07 deficiencies. This will be accomplished by TCMS signing the item off on the original SI-07 form - held on board the Griffon.

**DO NOT MODIFY**

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### **13.0 GALLEY WATER DRAIN PIPING REPAIRS**

#### **13.1 General**

13.1.1 The Griffon has a requirement to repair corroded Galley water drain pipe. The pipe is located at upper motor room on frame 37.

#### **13.2 Gas Freeing and Certification for Hotwork**

- The Contractor shall certify the following safe for hot work:
- Upper Engine Room
- Lower Engine Room
- Transformer Room
- Upper Motor Room
- Lower Motor Room

#### **13.3 Reference**

##### **13.3.1 Drawings:**

Drawing No.	Drawing Title.	Electronic File No.
G05GREYW2012	Griffon Galley Water Drain Piping	G05GREYW2012.pdf

#### **13.4 Technical**

##### **13.4.1 Grey Water Lines:**

- 13.4.1.1 The Contractor to note work shall be done at the same time as Section 12 Relocation of Galley Power Panel to take advantage of the period when the Galley is shut down for repairs.
- 13.4.1.2 The Contractor shall supply all labour and material to complete this section.
- 13.4.1.3 The Contractor shall replace a section of Galley Drain piping where it passes through the watertight bulkhead at frame 37 in the Upper Motor Room and install new pipe couplings on each end of the pipe. The section of 3" sch. 40 pipe to be replaced is approximately 20" long. The pipe couplings shall be Victaulic Roust-A-Bout Style 99 plain end system or similar. The Contractor shall follow the coupling manufacturer's pipe preparation recommendations prior to final install of the pipe couplings.
- 13.4.1.4 The Contractor shall crop the 3" steel pipe 8" aft of the bulkhead at frame 37 and 12" forward of the bulkhead at frame 37.

**DO NOT MODIFY**

- 13.4.1.5 The Contractor shall remove the bulkhead plate sealing this pipe to the bulkhead and grind flush the bulkhead surface.
- 13.4.1.6 The Contractor shall install a new section of pipe complete with new 5" X 5/16" bulkhead plate and pipe couplings on either end.
- 13.4.1.7 The Contractor shall continuously fillet weld the bulkhead plate and pipe to the bulkhead to re-establish the bulkhead's watertight integrity.
- 13.4.1.8 Prior to installation, the Contractor shall provide documentation to the Technical Authority showing the weld technique and welding material proposed is suitable for this purpose.

**13.5 Inspection Test and Trials**

- 13.5.1 The Contractor shall test the Galley drain pipe by having the Griffon crew operate all the affected equipment in the Galley and inspect for leaks. Any leaks will be repaired at the Contractor's expense.

**DO NOT MODIFY**

## **14.0 SEWAGE PLANT PARTIAL VENT REPLACEMENT**

### **14.1 General**

14.1.1 The Griffon's sewage plant is vented via a 6" pipe running forward from the sewage flat to the lower engine room then up the stack. The lower run of this vent is relatively horizontal and the thin wall mild steel pipe is rotted through in many places. Coast Guard requires replacement of this pipe with stainless steel pipe. In addition, a float chamber and alarm switch is to be installed to detect when the sewage plant backs up in to the vent.

### **14.2 Gas Freeing and Certification for Hot Work**

14.2.1 The Contractor shall certify the following spaces safe for hot work:

- Lower Engine Room
- Lower Motor Room
- Sewage Flat (Shaft Compartment)

### **14.3 References**

#### **14.3.1 Drawings:**

<b>Drawing Number</b>	<b>Drawing Title</b>	<b>Electronic File Name</b>
G05-SV1	Sewage Plant Vent Line - Fitted	Griffon Fitted Sewage Vent.pdf
G05-SV2	Sewage Plant Vent Line - Proposed	Griffon Proposed Sewage Vent.pdf
G05-SV3	Sewage Plant Vent Line - Proposed Construction Details	Griffon Proposed Sewage Vent Details.pdf

### **14.4 Technical**

#### **14.4.1 Operational Considerations**

14.4.1.1 The sewage plant is to remain operational during the work period so the Contractor is expected to complete the work in a staged manner. The Griffon ER staff will work with the Contractor to turn off the sewage plant blowers as required - this reduces flow in the vent line.

#### **14.4.2 Vent Description**

14.4.2.1 The vent line to be replaced runs from the PVC flange in the sewage plant forward to where the vent pipe turns vertical up the stack. The vent is thin wall mild steel pipe with rolled grooves to accept Victaulic FireLock style couplings and fittings. The Victaulic connectors and fittings will be re-used - Contractor to supply new rubber

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**DO NOT MODIFY**

inserts. Where the vent passes through watertight bulkheads at frames 24 and 36, the vent pipe is welded to the bulkhead.

**14.4.3 Fitted Vent Pipe Removal**

- 14.4.3.1 The fitted vent pipe, as indicated on the reference drawings, is to be removed and disposed of by the Contractor.
- 14.4.3.2 The Contractor shall ensure any contents of the vent line - liquid or solid - does not contaminate the bilges or any other part of the ship during removal. The Contractor shall be responsible for disposal of all solid waste from the vent line. The Coast Guard will assist in disposal of any liquid in the vent line - there is a sewage pump out connection on the dock at Prescott which can be used.
- 14.4.3.3 The Contractor shall remove the pipe from the bulkheads at frames 24 and 36. The old weld shall be ground flush in preparation for the new pipe install.

**14.4.4 Bulkhead Penetrations**

- 14.4.4.1 At the bulkhead penetrations, the new vent pipe will be type 316 stainless steel schedule 40 and will be continuously welded to the mild steel watertight bulkheads on both sides.
- 14.4.4.2 Prior to installation, the Contractor shall provide documentation to the Technical Authority showing the weld technique and welding material proposed is suitable for this purpose.

**14.4.5 Float Tank Installation**

- 14.4.5.1 The reference drawings show the location of the new float tank. The tank is to be located aft of the starboard propulsion motor. The tank is to utilize the space under the circuit breaker platform. The reference drawing shows a suggested design for the float tank - the Contractor is responsible for construction of a tank to fit in to the space available.
- 14.4.5.2 The Contractor is to take into account obstructions, support of the tank on the ship's structure, and alignment of the piping when constructing the tank.
- 14.4.5.3 The Contractor shall support the new vent tank so that the weight of this tank is not carried by the piping.
- 14.4.5.4 The Contractor is responsible for all materials associated with the construction and mounting of the tank. The tank is to be constructed of schedule 40 type 316 stainless pipe.
- 14.4.5.5 The Contractor shall supply two Mobery float switches (one to be a spare) type A181D/F84 and one mounting flange for this switch (PN 71020/107).
- 14.4.5.6 Note that the Coast Guard will be responsible for the electrical connections to the float switch.

**DO NOT MODIFY**

**14.4.6 Vent Replacement**

- 14.4.6.1 The sections of vent line not penetrating bulkheads will be Schedule 10 type 316 stainless steel pipe. This pipe will be grooved to accept the Victaulic fittings. The new installation has two more 6" Victaulic couplings than the old line - the Contractor shall supply these fittings.
- 14.4.6.2 The Contractor shall supply the following stainless steel (minimum 150# rated) ball valves:
- Five 1" valves for the vent line drains;
  - One 1-1/2" valve for the float tank drain;
  - Two 1" valves for the flushing points.

**14.5 Inspection, Test and Trials**

- 14.5.1 After final installation of the new vent line, the Coast Guard will assist the Contractor with flooding the entire line with fresh water.
- 14.5.2 The vent line will be inspected for leaks when flooded.
- 14.5.3 Any leaks due to the work of the Contractor shall be repaired at the Contractor's expense.
- 14.5.4 The flooding test will be repeated as required until the line is proven leak free.



**FOR GOVERNMENT USE ONLY  
POUR USAGE DU GOUVERNEMENT SEULEMENT**

Special Investigations Directorate File No.  
N° de dossier de la Direction des enquêtes spéciales

Date Received (Y-A M D-J)  
Date de réception

**CONSENT TO A CRIMINAL RECORD VERIFICATION  
CONSENTEMENT À LA VÉRIFICATION DE L'EXISTENCE D'UN CASIER JUDICIAIRE**

This form must be completed and signed by each individual who is currently on the Board of Directors of the Bidder/Offeror/Supplier and provided with the Bid/Offer/Arrangement.

Le présent formulaire doit être rempli et signé par chaque membre du conseil d'administration du soumissionnaire/de l'offrant/du fournisseur et fourni avec la soumission/l'offre/l'arrangement.

**A**

**PRIVACY ACT STATEMENT**

**ÉNONCÉ CONCERNANT LA LOI SUR LA PROTECTION DES RENSEIGNEMENTS PERSONNELS**

The personal information requested on this form is collected under the authority of subsection 750(3) of the *Criminal Code*, paragraph 42(1(c)) of the *Financial Administration Act*, and sections 7 and 21 of the *Department of Public Works and Government Services Act*. The information will be used for validating the criminal conviction certifications necessary for obtaining or maintaining a procurement instrument. It may be shared with other government departments, agencies, as well as provincial, territorial, and federal courts, within the limits of what is required to conduct the criminal conviction verification.

A refusal to provide information will result in the bid/offer/arrangement being rejected or the contract terminated, the standing offer being set-aside or the supply arrangement being cancelled, as applicable.

The personal information is described in personal information bank PWGSC PPU 184 - Integrity Assessment Program. Individuals have a right of access to, correction of and protection of their information in accordance with the *Privacy Act*.

Les renseignements personnels demandés dans le présent formulaire sont recueillis en vertu du paragraphe 750(3) du *Code criminel*, du paragraphe 42(1(c)) de la *Loi sur la gestion des finances publiques* et des articles 7 et 21 de la *Loi sur le ministère des Travaux publics et des Services gouvernementaux*. Ces renseignements seront utilisés pour valider les attestations de condamnation au criminel nécessaires pour obtenir ou conserver un instrument d'approvisionnement. Les renseignements peuvent être diffusés à d'autres ministères et organismes fédéraux, ainsi qu'à des tribunaux provinciaux, territoriaux et fédéraux, dans les limites de ce qui est requis pour la vérification des condamnations au criminel.

À défaut de fournir les renseignements demandés, la soumission/l'offre/l'arrangement sera rejeté ou le contrat résilié, l'offre à commandes sera mise de côté ou l'arrangement en matière d'approvisionnement sera annulé, selon le cas.

Les renseignements personnels sont décrits dans les fichiers de renseignement personnels n° TPSGC PPU 184 - Programme de l'évaluation de l'intégrité. Les personnes ont le droit d'accéder aux renseignements personnels qui les concernent, ainsi que de les faire corriger ou protéger, conformément à la *Loi sur la protection des renseignements personnels*.

**B**

**BIOGRAPHICAL INFORMATION - Must be completed by the individual  
RENSEIGNEMENTS BIOGRAPHIQUES - À remplir par l'individu**

Family Name (Last Name) - Nom (de famille)

Family Name at Birth - Nom de famille à la naissance

Full Given Names (No initials) - Prénoms au complet (aucune initiale)

All other previously used names (i.e. maiden name, previously married names, legal name change, nicknames)  
Tout autre nom utilisé (tel que nom de jeune fille, noms maritaux précédents, changement de nom légaux, sobriquets)

Gender - Sexe

☐

Male  
Masculin

☐

Female  
Féminin

Date of Birth - Date de naissance (Y-A M D-J)

**Current Residential Information  
Information résidentielle actuelle**

Apartment No. - N° d'appartement

Street No. - N° civique

Street Name - Nom de la rue

City - Ville

Province

Postal Code - Code postal



<b>C</b>	<b>CONSENT - Must be signed by the individual CONSENTEMENT - Doit être signé par l'individu</b>
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I, the undersigned, confirm that I have read and understand the above *Privacy Act* statement and that I consent to the collection and use of my personal information as described therein.

Je, soussigné, confirme avoir pris connaissance de l'Énoncé concernant la *Loi sur la protection des renseignements personnels* et consens à la collecte et à l'utilisation des renseignements personnels fournis aux présentes.

Signature	
Print Name - Nom en lettres moulées	Date (Y-A M D-J)

<b>D</b>	<b>ADMINISTRATIVE INFORMATION - Internal Government Use Only RENSEIGNEMENTS ADMINISTRATIFS - Pour usage interne du gouvernement seulement</b>	
Requesting Branch/Sector/Directorate/Division - Direction générale/Secteur/Direction/Division requérante		
Solicitation/Proposed Contract No. - N° de la demande de soumission/N° du contrat		Date of Request (Y-A M D-J) Date de la demande
Requesting Contact Person - Personne-ressource requérante	Contact Person Tel. No. - N° de tél. de la personne-ressource	