Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

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 0B2 / Noyau 0B2
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

Title - Sujet
CCGS Griffon Floating Refit 2016

Solicitation No. - N° de l'invitation F2599-165033/A	**Date** 2016-06-09
Client Reference No. - N° de référence du client F2599-165033	**GETS Ref. No. - N° de réf. de SEAG** PW-$$MD-034-25871
File No. - N° de dossier 034md.F2599-165033	**CCC No./N° CCC - FMS No./N° VME**

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM
on - le 2016-07-06

Time Zone
Fuseau horaire
Eastern Daylight Saving Time EDT

F.O.B. - F.A.B.
Plant-Usine: ☐ **Destination:** ☑ **Other-Autre:** ☐

Address Enquiries to: - Adresser toutes questions à: Green, Dave	**Buyer Id - Id de l'acheteur** 034md
Telephone No. - N° de téléphone (819) 420-2900 ( )	**FAX No. - N° de FAX** ( ) -

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:
DEPARTMENT OF FISHERIES AND OCEANS
CCGS GRIFFON
401 KING ST W.
PRESCOTT
Ontario
K0E1T0
Canada

Instructions: See Herein

Instructions: Voir aux présentes

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

Delivery Required - Livraison exigée See Herein	**Delivery Offered - Livraison proposée**

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

Telephone No. - N° de téléphone
Facsimile No. - N° de télécopieur

Name and title of person authorized to sign on behalf of Vendor/Firm (type or print)
Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)

Signature **Date**

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

Canada

Invitation to Tender
(ITT)

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PART 1 - GENERAL INFORMATION

1.1 Introduction

The bid solicitation is divided into seven parts plus attachments and 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;

Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;

Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, if applicable, and the basis of selection;

Part 5 Certifications: includes the certifications to be provided;

Part 6 Financial and Other Requirements: includes specific requirements that must be addressed by bidders; and

Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Statement of Work, the Basis of Payment, the Federal Contractors Program for Employment Equity - Certification, the Insurance Requirements and any other Annexes.

1.2 Summary

(a) The requirement is:

i. To carry out the floating refit of the Canadian Coast Guard Vessel CCGS Griffon in accordance with the associated Technical Specifications detailed in Annex A.

ii. To carry out Unscheduled Work authorized by the Contracting Authority.

(b) As per the Integrity Provisions under section 01 of Standard Instructions 2003 bidders must provide a list of all owners and/or Directors and other associated information as required. Refer to section 4.21 of the Supply Manual for additional information on the Integrity Provisions.

(c) The requirement is exempt from the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), Annex 4 and the North American Free Trade Agreement (NAFTA), Chapter 10, Annex 1001.2b, Paragraph 1(a).

The requirement is subject to the Agreement on Internal Trade (AIT). The sourcing strategy relating to this procurement will be limited to suppliers from Eastern Canada, in accordance with the Shipbuilding, Refit, Repair and Modernization Policy (2010-08-16).

(d) The Federal Contractors Program (FCP) for employment equity applies to this procurement; see Part 5 - Certifications, Part 7 - Resulting Contract Clauses and the annex titled Federal Contractors Program for Employment Equity - Certification.

1.3 Work Period - Marine

Commencement: August 10, 2016
Completion: November 2, 2016

1.4 Debriefings

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

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/all) issued by Public Works and Government Services Canada (PWGSC). 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 SACC 2003 (2016-04-04) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.2 Submission of Bids

Bids must be submitted only to PWGSC Bid Receiving Unit by the date, time and place designated on the front page Invitation to Tender (ITT) of the bid solicitation.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority (CA) no later than five (5) 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 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 question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated and the enquiry can be answered 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 questions and answers will be included as an amendment to the solicitation.

2.4 Applicable Laws

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

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

Refer to Annex "I1" for Deliverables/Certifications.

2.5 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 the site visit to be held on June 21 and 22, 2016 at 09:00am at the Canadian Coast Guard Base, 401 King St W, Prescott, ON K0E 1T0. All Contractors must have valid identification to sign in at the Main Gate.

There is a designated parking area available at the CCG Base Prescott.
Map : http://www.tbs-sct.gc.ca/dfrp-rbif/pn-nb/22500-eng.aspx

Bidders are requested to communicate with the Contracting Authority no later than three (3) business days prior to the site visit date to confirm attendance and provide the name(s) of the person(s) who will attend. Bidders may be requested to sign an attendance sheet. Bidders who do not attend or do not 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.

2.6 Bidders' Conference

A bidder's conference chaired by the Contracting Authority will be held at Canadian Coast Guard Base, 401 King St W, Prescott, ON K0E 1T0 on June 22, 2016 at 1pm. The scope of the requirement outlined in the 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 representation.

Bidders are requested to communicate with the CA before the conference to confirm attendance. Bidders should provide, in writing to the CA, the names of the person(s) who will be attending and a list of issues they wish to table no later than three (3) business days before the scheduled Conference.

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

2.7 Additional Instructions - Work Period – Marine

By submitting a bid the Bidder certifies that they have sufficient material and human resources allocated or available and that the work period outlined in 1.3 Work Period – Marine is adequate to both complete the known work and absorb a reasonable amount of unscheduled work.

The vessel will be manned during the work period and will be considered to be in-commission. The vessel during that period will be in the care or custody of the Canadian Coast Guard and under its control.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Required Submission Sections

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

Section I - Technical Bid (1 hard copy and 1 soft copy on DVD)
Section II - Financial Bid (1 hard copy and 1 soft copy on DVD)
Section III - Certifications (1 hard copy and 1 soft copy on DVD)

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

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

3.2 Required Submission Information

Section I: Technical Bid

The Bidder must provide all of the deliverables as referenced in Annex II – Deliverables / Certifications.

Section II: Financial Bid

The Bidder must submit their financial bid in accordance with Annex H – Financial Bid Presentation Sheet and in Annex H - Appendix 1 – Pricing Data Sheet. The total amount of applicable taxes must be shown separately.

Section III: Certifications

The Bidder must submit the certifications required under Part 5.

3.3 Submission Format

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

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

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

1. use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and

2. use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

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 and financial evaluation criteria.

b. An evaluation team composed of representatives of Canada will evaluate the bids.

Technical Bid

Notwithstanding deliverable requirements specified within the solicitation and its associated Annex A – Statement of Work, mandatory deliverables that must be submitted with the Bidder's bid to be deemed responsive are summarized in Annex II – Deliverables / Certifications – II1 Mandatory Tender Deliverables Check List.

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, article 3.2 – Required Submission Information, Section II – Financial Bid.

Certifications

Bidders must submit the certifications required under Part 5 – Certifications.

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 of the mandatory requirements.

4.2 Evaluation of Price

The price of the bid will be evaluated in Canadian dollars, Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included.

4.2.1 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 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.

4.3 Basis of Selection

A bid must comply with the requirements of the 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.

4.4 Deliverables after Contract Award

For details refer to Annex II – Deliverables / Certifications – II2 Deliverables after Contract Award.

PART 5 - CERTIFICATIONS

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

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

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

5.1 Certifications Required Precedent to Contract Award

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

5.1.1 Integrity Provisions - Associated Information

By submitting a bid, the Bidder certifies that the Bidder and its Affiliates are in compliance with the provisions as stated in Section 01 Integrity Provisions - Bid of SACC 2003 Standard Instructions - Goods or Services - Competitive Requirements. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

5.1.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from Employment and Social Development Canada (ESDC) - Labour's website.

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

Canada will also have the right to terminate the Contract for default if a Contractor, or any member of the Contractor if the Contractor is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list during the period of the Contract.

The Bidder must provide the Contracting Authority with a completed Annex C Federal Contractors Program for Employment Equity - Certification, before contract award. If the Bidder is a Joint Venture, the Bidder must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

PART 6 - FINANCIAL AND OTHER REQUIREMENTS

6.1 Financial Capability

SACC Manual clause A9033T (2012-07-16) Financial Capability

6.2 Contract Financial Security

6.2.1 In the bid, the Bidder must indicate the following:

In Annex I1 “Deliverables/Certifications”:
a) the type of Contract Financial Security the Bidder intends to provide if awarded the Contract;

and

In Annex H "Financial Bid Presentation Sheet":
b) the cost to the Bidder of the Contract Financial Security.

Refer to Annex "I1" for Deliverables/Certifications

6.2.2 If this bid is accepted, the Bidder shall be required to provide the Contract Financial Security in accordance with 7.14 within **(5) five Working Days** after the date of contract award.

6.2.3 If, for any reason, Canada does not receive, within the specified period, the required Contract Financial Security, Canada may accept another offer, seek new bids, negotiate a contract or not accept any bids, as Canada may deem advisable.

6.3 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 article 6.2, paragraph 2 of this section and shall be entered into Annex H – Financial Bid Presentation Sheet, item D).

   b. If the list in article 6.2, paragraph 2 of this section 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 ten (10) calendar days before the bid closing date, of its proposed location for performing the Work.

   c. The Contracting Authority will confirm to the Bidder, in writing, at least five (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 provided under article 6.2, paragraph 2 of this section 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 Costs
Manned only: CCGS Griffon

Company	City/Province	Manned Transfer Cost
Caraquet Marine Industry Ltd.	Caraquet, NB	$42,696
Canadian Maritime Engineering Limited	North Sydney, NS	$62,650
Chantier Forillon	Gaspe, QC	$39,085
Chantier Matane	Matane, QC	$27,873
Davie Industries Inc.	Levis, QC	$15,267
Heddle Marine	Hamilton, ON	$13,873
Hike Metal Products Ltd	Wheatley, ON	$24,325
MetalCraft Marine Inc.	Kingston, ON	$3,484
Oceans Industries Inc.	Saint-Bernard-Sur-Mer, QC	$18,244
Shelburne Ship Repair	Shelburne, NS	$68,858
Verreault Navigation Inc.	Les Mechins, QC	$29,329

All Prices in CAD

Proposed Dry Docking Location: _____.

For details refer to Annex II Deliverables / Certifications, IIII - Mandatory Tender Deliverables Check List.

6.4 Docking Facility

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

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

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

Refer to Annex "II1" for Deliverables/Certifications

6.5 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.

For details refer to Annex I Deliverables / Certifications, I1 - Mandatory Tender Deliverables Check List.

6.6 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.

For details refer to Annex I Deliverables / Certifications, I1 - Mandatory Tender Deliverables Check List.

6.7 Preliminary Work Schedule

6.7.1 At the time of bid closing the Bidder must submit to Canada one (1) copy of its preliminary production work schedule in Gantt chart format. 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.

6.7.2 The Contractor's schedule must include target dates for each of the following significant events:
a. Commencement of Work as defined at Article 7.5.1
b. All priced work items listed at Annex H Appendix 1
c. FSR Scheduling for Priced Work Items as defined at Annex A – 7.2, 13.1, 21.1, and 22.1
d. Completion of Work as defined at Article 7.5.1
e. Dock and Sea Trials Period

For details refer to Annex I Deliverables / Certifications, I1 - Mandatory Tender Deliverables Check List.

6.8 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.

For details refer to Annex I Deliverables / Certifications, I1 - Mandatory Tender Deliverables Check List.

6.9 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 article 6.16.

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

For details refer to Annex I Deliverables / Certifications, I1 - Mandatory Tender Deliverables Check List.

6.10 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.

For details refer to Annex II Deliverables / Certifications, I1 - Mandatory Tender Deliverables Check List.

6.11 Fire Protection, Fire Fighting and Training Procedures

The Bidder must submit with its bid objective evidence that it has documented fire protection, firefighting and training procedures compliant with current regulations and their insurance requirements. The fire protection, firefighting and training procedures will, once accepted by Canada, form part of the Contract. Please refer to article 7.27. If this information is not provided with the bid it will render the bid non-responsive.

For details refer to Annex I Deliverables / Certifications, I1 - Mandatory Tender Deliverables Check List.

6.12 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. 13 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 D – Insurance Requirements. If this information is not provided with the bid it will render the bid non-responsive.

For details refer to Annex I Deliverables / Certifications, I1 - Mandatory Tender Deliverables Check List.

6.14 Welding Certification

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

   a. CSA W47.1-09, Certification for Companies for Fusion Welding of Steel (Division Level 1 or 2); and

   b. CSA W47.2-11, Certification for Companies for Fusion Welding of Aluminum (Division Level 1 or 2).

   The bidder shall submit proof of Certification for Companies for Fusion Welding of Steel 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.
   Proof of Certification for Companies for Fusion Welding of Aluminum is not required with the bid but must be readily available before the commencement of any fabrication work, and upon request from the Technical Authority. The certification shall remain valid for the duration of the contract.

For details refer to Annex I Deliverables / Certifications, I1 - Mandatory Tender Deliverables Check List.

6.15 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.

Introduction

Project management refers to system integration and technical control as well as business management of the CCGS Griffon Inspection, Repair and Maintenance Requirement.

The Contractor must provide the following within 5 days of Contract Award:

Project Action Plan (PAP):
The Contractor must document the project management for the work in a Project Action Plan and must update this plan at monthly intervals or more frequently as required by the Contracting Authority.

The PAP must comprise:
- i) organization structure charts;
- ii) a master schedule, support schedules, sub-Contractor schedules and work;
- iii) Government Furnished Equipment (GFE), and Contractor Furnished Equipment (CFE) delivery dates as a minimum.

The monthly updates to the PAP must comprise schedule updates, a progress report and review meetings. The components of the PAP and its updates are described in the following sub-sections.

1) Project Integration Management:
The Contractor must provide an overall project organizational chart identifying all key personnel and sub-Contractors. Further, the Contractor must identify the contract-related work each sub-Contractor is responsible for.

2) Change Management Log:
The Contractor must provide a Change Management Log that must be used for the duration of the project to manage project changes.

The Change Management Log must track project issues with the following criteria:

i) Individual tracking number;
ii) Date issue was raised;
iii) Expected resolution date;
iv) Date issue was resolved;
v) Brief note of resolution on issue;
vi) Individual who raised issue;
vii) Individual assigned to resolve issue;
viii) Risk Factor.

3) Risk Management Plan:
The Contractor must identify emergent risks and rank these risks by impact on the work. Mitigation strategies must be identified for all "High" risks. The "Risk Management Plan" must be updated at least bi-weekly and provided to the Technical and Contracting Authorities. The "Risk Management Plan" must be included in the monthly progress meeting Record of Decisions.

4) Scheduling:
The Contractor must provide a schedule(s) that breaks the work down to the system and component level. The schedule must include sub-Contractor and FSR schedules to the same level. The Contractor must update the schedule(s) on a weekly basis and the updates must be submitted electronically in MS Project 2013 or equivalent format to the Contract Authority,
and the Technical Authorityby close of Business each Monday until the end of the project.

The schedule(s) must identify at a minimum the following elements ;
The schedule(s) must be baselined.

a) Major Milestones

b) The Work Breakdown Structure (WBS) on at least three or more levels for each section of the Specification package. More specifically, the WBS must include the strip outs, production, assembly, installation, bench testing, system commissioning and tests and trials, the expected and required resources, and the necessary sea trials;

c) Predecessors and successors;start and end dates for each item;

d) The critical path to the acceptance of the work;

e) The subcontractors' and FSR schedules up to the same level;

f) Long lead items and GFE;

The PMBOK eighth edition must be used as the reference for scheduling.

*5) Project Reporting:*must provide a monthly Progress Report describing the status of the project Time Line, Cost and Performance as an introduction. Time, Cost and Performance must then be addressed in detail, clearly demonstrating earned value using Cost Performance Index (CPI) and Schedule Performance Index (SPI). The report must identify significant risks to the program and the actions taken to resolve these risks. The risk analysis must identify any impact upon delivery and actions taken to recover any slippage that may affect the contract delivery date. The report, either in hard copy or in electronic format, must be delivered monthly, three (3) working days prior to the progress review meeting to the Contract Manager, the Inspection Authority and the Technical Authority. The progress report must include sub-Contractor and major component supplier activity.
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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

For details refer to Annex I Deliverables / Certifications, I1 - Mandatory Tender Deliverables Check List.

6.16 List of Proposed Subcontractors

If the bid includes the use of subcontractors and FSR's, the Bidder shall provide a list of all subcontractors and FSR's 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 and any planned travel. 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.

For details refer to Annex I Deliverables / Certifications, I1 - Mandatory Tender Deliverables Check List.

6.17 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.

For details refer to Annex I Deliverables / Certifications, I1 - Mandatory Tender Deliverables Check List.

6.18 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.

For details refer to Annex I Deliverables / Certifications, I1 - Mandatory Tender Deliverables Check List.

6.19 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.

For details refer to Annex I Deliverables / Certifications, I1 - Mandatory Tender Deliverables Check List.

PART 7 - RESULTING CONTRACT CLAUSES

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

7.1 Requirement

The requirement is:

a. To carry out the dry docking refit of the Canadian Coast Guard Vessel CCGS Griffon in accordance with associated Technical Specifications as detailed in Annex A – Statement of Work (CCGS Griffon).

b. To carry out unscheduled work authorized by the Contracting Authority.

7.2 Definitions:

In this Contract, unless the context otherwise requires:

‘CCGS’ – means Canadian Coast Guard Ship

‘Design Change’ - means any change to approved drawings, Specifications, or statements of requirements. Work necessary to eliminate " fouling" points or for the correction of errors made by the Contractor is not a "Design Change" within the meaning of this section;

‘DFO’ – means Department of Fisheries and Oceans Canada

Dollar, “Dollars”, or “$” - means the legal tender of Canada;

“Good Marine Quality” - means constructed of materials unaffected by or resilient to moisture, sea spray (salt water and salt air), extremes of temperature, and other hazards of the marine environment, and has been designed and constructed to perform intended function in the marine environment conditions of the Atlantic Ocean and to withstand the dynamic motions and cyclic loads imparted in a marine environment. The item must further be designed and constructed for ease and safety of operation under dynamic conditions, to have an operational life equal or superior to the useful life that can be reasonably expected from such item in similar operating conditions and to require minimum maintenance as a result of such marine operating conditions;

‘Milestone’ - means an event, the completion of which signifies a significant and measurable achievement in the performance of the Work.

‘OEM’ - means original equipment manufacturer;

‘Owner’ - means Her Majesty the Queen in right of Canada as represented by the Minister of Fisheries and Oceans

‘Owners Representative’ – means the Chief Engineer of the Griffon or his/her designate.

‘PWGSC’ – means Public Works and Government Services Canada;

‘Working Day’ – means any day of the year other than a Saturday, Sunday or any statutory holiday in the Province of Newfoundland, Nova Scotia, Ontario, Quebec or in the Public Service of Canada, and any reference herein to a day or days will mean calendar days unless expressly described as a “Working Day” or “Working Days”

Capitalized terms not otherwise defined in these Articles of Agreement numbered 1 through 42 inclusive and defined in the General Conditions or Supplemental Conditions referred to at Section 7.2 will have meanings given to them in those Annexes.

7.3 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.

7.3.1 General Conditions

SACC Manual Clause 2030 (2016-04-04), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

SACC Manual Clause 2030 (2016-04-04) 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 E - Appendix 1 for Warranty Defect Claim Procedures and Form.

7.3.2 Supplemental General Conditions

SACC Manual Clause 1029 (2010-08-16), Ship Repairs apply to and form part of the Contract.

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

7.4 Security Requirement

There is no security requirement applicable to this Contract.

7.5 Term of Contract

7.5.1 Work Period – Marine

1. Work must commence and be completed as follows:

   Commencement: August 10, 2016
   Completion: November 2, 2016

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

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

   (a) Canada gives 30 calendar days advance notice of a 15 day maximum delay. The Contractor may claim no additional cost when arrival of the vessel at the Contractor's facility is delayed up to a maximum of 15 calendar days beyond the commencement date, above. The Completion Date shall be extended by a period equal to the length of the delay.

   (b) Canada does not provide 30 calendar days advance notice of a delay. The Completion Date shall be reasonably adjusted to reflect the impact of the delay on the arrival of the Vessel and Canada shall pay only the Daily Services Fee referred to in the Basis of Payment for the period of the delay.

7.5.2 Additional Instructions to Work Period

The vessel will be manned during the work period and will be considered to be in commission. The vessel during that period will be in the care and custody of the Canadian Coast Guard and under its control.

7.6 Authorities

7.6.1 Contracting Authority

The Contracting Authority for the Contract is:

Dave Green
Department of Public Works and Government Services Canada (PWGSC)
Marine Sector
PWGSC, 6C2 Place du Portage, Phase III
11 Laurier Street,
Gatineau, Quebec, K1A 0S5
Tel: (819) 420-2900
Fax: (819) 956-0897
E-Mail: dave.green@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.

7.6.2 Technical Authority

The Technical Authority for the Contract is: (To be completed at contract award)

Name:
Title:
Department:
Address:

Phone:
Fax:
Email:

The Technical Authority 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.

7.6.3 Inspection Authority

The Inspection Authority for the Contract is the Canadian Coast Guard is: (To be completed at contract award)

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

The Inspection Authority named above 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.

7.7 Payment

7.7.1 Basis of Payment – Firm Price

In consideration of the Contractor satisfactorily completing its obligations under the Contract, the Contractor will be paid a firm price indicated in Annex B – Basis of Payment for the known Work. All Taxes are extra, if applicable.

Payment for unscheduled work shall be in accordance with Annex B as applicable.

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.

7.7.2 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 ninety (90) percent of the amount claimed and approved by Canada if:

   a. an accurate and complete claim for payment using form PWGSC-TPSGC 1111, Claim for Progress Payment (http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/1111.pdf), 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 ninety (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.

7.7.3 Liens – Section 427 of the Bank Act

Refer to SACC Manual Clause H4500C (2010-01-11) Liens – Section 427 of the Bank Act

7.7.4 Limitation of Price

Refer to SACC Manual Clause C6000C (2011-05-16) Limitation of Price

7.7.5 Time Verification

Refer to SACC Manual Clause C0711C (2008-05-12) Time Verification

7.8 Invoicing Instructions

The Contractor must submit invoices in accordance with the information required in SACC Manual General Conditions 2030 (2016-04-04) Higher Complexity – Goods, Section 13 as well as Article 7.7 – Payment and Article 7.8 – Invoicing Instructions herein.

7.8.1 Invoices

1. Invoices are to be addressed to:

   Canadian Coast Guard Marine Engineering
   520 Exmouth Street
   Sarnia, ON, N7T 8B1
   Attn: Gail Eyre

   And;

The original invoice to be forwarded for verification to:

   Public Works and Government Services Canada
   Marine Systems Directorate
   Ship Refit Division
   6C2 Place du Portage, Phase III
   11 Laurier Street
   Gatineau, Quebec K1A 0S5
   Attention: Dave Green

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.

7.8.2 Invoicing Instructions – Progress Claim

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

   (a) all information required on form PWGSC-TPSGC 1111;

   (b) all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;

2. Applicable Taxes must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no Applicable Taxes payable as it was claimed and payable under the previous claims for progress payments.

3. The Contractor must prepare and certify one original and two (2) copies of the claim on form PWGSC-TPSGC 1111, and forward it to the Inspection Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

   The Inspection 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.

7.8.3 Warranty Holdback

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

7.9 Certifications

7.9.1 Compliance

The continuous compliance with the certifications provided by the Contractor in its bid and the ongoing cooperation in providing associated information are conditions of the Contract. Certifications are subject to verification by Canada during the entire period of the Contract. If the Contractor does not comply with any certification, fails to provide the associated information, or if 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.

7.9.2 Federal Contractors Program for Employment Equity – Default by the Contractor

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

7.10 Applicable Laws

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

7.11 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 (2016-04-04) General Conditions – Higher Complexity - Goods;
(d) the general conditions 1031-2 (2012-07-16), Contract Cost Principles;
(e) Bidders' Questions and Answers
(f) Annex A – Statement of Work - Specifications;
(g) Annex B – Basis of Payment;
(h) Annex C – Federal Contractors Program for Employment Equity – Certification;
(i) Annex D - Insurance Requirements;
(j) Annex E – Warranty;
(k) Annex F – Procedure for Unscheduled Work;
(l) Annex G – Quality Control / Inspection;
(m) Annex H – Financial and Bid Presentation Sheet;
(n) Annex I – Deliverables / Certifications;
(o) tthe Contractor's bid dated _____(insert date of bid), as amended on _____(insert date(s) of amendment(s) if applicable).

7.12 Insurance Requirements

The Contractor must comply with the insurance requirements specified in Annex D – Insurance Requirements. 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

7.13 Limitation of Contractor's Liability for Damages to Canada

1. This section applies despite any other provision of the Contract and replaces the section of the general conditions entitled "Liability". Any reference in this section to damages caused by the Contractor also includes damages caused by its employees, as well as its subcontractors, agents, and representatives, and any of their employees.

2. Whether the claim is based in contract, tort, or another cause of action, the Contractor's liability for all damages suffered by Canada caused by the Contractor's performance of or failure to perform the Contract is limited to $10 million per incident or occurrence to an annual aggregate of $20 million for losses or damage caused in any one year of carrying out the Contract, each year starting on the date of coming into force of the Contract or its anniversary. This limitation of the Contractor's liability does not apply to nor include:

   (a) Any infringement of intellectual property rights;

   (b) Any breach of warranty obligations;

   (c) Any liability of Canada to a third party arising from any act or omission of the Contractor in performing the Contract; or

   (d) Any loss for which the policies of insurance specified in the Contract or any other policies of insurance held by the Contractor would provide insurance coverage.

3. Each Party agrees that it is fully liable for any damages that it causes to any third party in connection with the Contract, regardless of whether the third party makes its claim against Canada or the Contractor. If Canada is required, as a result of joint and several liability, to pay a third party in respect of damages caused by the Contractor, the Contractor must reimburse Canada for that amount.

4. The Parties agree that nothing herein is intended to limit any insurable interest of the Contractor nor to limit the amounts otherwise recoverable under any insurance policy. The Parties agree that to the extent that the insurance coverage required to be maintained by the Contractor under this Contract or any additional insurance coverage maintained by the Contractor, whichever is greater, is more than the limitations of liability described in sub article (2), the limitations provided herein are increased accordingly and the Contractor shall be liable for the higher amount to the full extent of the insurance proceeds recovered.

5. If, at any time, the total cumulative liability of the Contractor for losses or damage suffered by Canada caused by the Contractor's performance of or failure to perform the Contract, excluding liability described under subsection 2(a), (b), (c) and (d) exceeds $40 million, either Party may terminate the Contract by giving notice in writing to the other Party and neither Party will make any claim against the other for damages, costs, expected profits or any other such loss arising out of the termination. However, no such termination or expiry

of the Contact shall reduce or terminate any of the liabilities that have accrued to the effective date of the termination but which liabilities are subject to the limitations as specified in sub-article 1. through 4., above.

6. The date of termination pursuant to this Article, shall be the date specified by Canada in its notice to terminate, or, if the Contractor exercises the right to terminate, in a notice to the Contractor from Canada in response to the Contractor's notice to terminate. The date of termination shall be in Canada's discretion to a maximum of twelve (12) months after service of the original notice to terminate served by either Party pursuant to sub-article 5., above.

7. Nothing shall limit Canada's other remedies, including Canada's right to terminate the Contract for default for breach by the Contractor of any of its obligations under this Contract, notwithstanding that the

   Contractor may have reached any limitation of its liability hereunder.

7.13.1 Environmental Impairment Liability Insurance

1. The Contractor must obtain Contractor's Pollution Liability insurance, providing coverage for Asbestos Abatement, 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 $5,000,000 per accident or occurrence and in the annual aggregate.

2. 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.

3. The Contractor's Pollution Liability insurance coverage provided under the remarks section above) 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 as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.

   b. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.

   c. Separation of Insureds: 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.

   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. Incidental Transit Extension: The policy must extend to losses arising from any waste, products or materials transported, shipped, or delivered via any transportation mode to a location beyond the boundaries of a site at which the Contractor or any entity for which

   f. the Contractor is legally liable is performing or has performed the operations described in the contract.

   g. Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:
Director Business Law Directorate,
Quebec Regional Office (Ottawa),
Department of Justice,
284 Wellington Street, Room SAT-6042,
Ottawa, Ontario, K1A 0H8

For other provinces and territories, send to:

Senior General Counsel,
Civil Litigation Section,
Department of Justice
234 Wellington Street, East Tower
Ottawa, Ontario K1A 0H8

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

7.14 Financial Security

7.14.1 Term of Financial Security

Any bond, bill of exchange, letter of credit or other security provided by the Contractor to Canada in accordance with the terms of the Contract must not expire before 90 days after the completion date indicated in the Contract.The Contracting Authority may, at its sole discretion, require an extension to the period of the security, for which the Contractor may apply for financial compensation.

The Contracting Authority may, at its sole discretion, return the security to the Contractor before the expiration, provided however that no risk will accrue to Canada as a result of this.

7.14.2 Contract Financial Security

1. The Contractor must provide one of the following contract financial securities within **five (5)** Working Days after the date of contract award:

(a) a performance bond (form PWGSC-TPSGC 505) and a labour and material payment bond (form PWGSC-TPSGC 506), each in the amount of 20 percent of the Contract Price;

OR

(b) a security deposit as defined below in the amount of 10 percent of the Contract Price.

Any bond must be accepted as security by one of the bonding companies listed in Treasury Board Contracting Policy, Appendix L, Acceptable Bonding Companies (http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12027). The bond forms mentioned in (a) above are available at: http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html.

2. If, for any reason, Canada does not receive the financial security in the amount set out above within the specified period, the Contractor will be in default. Canada may, at its discretion, terminate the Contract for default pursuant to the Contract default provision, accept another bid, reject all bids or issue a new bid solicitation.

3. Security deposits in the form of government guaranteed bonds with coupons attached will be accepted only if all coupons that are unmatured, at the time the security deposit is provided, are attached to the bonds. The Contractor must provide written instructions concerning the action to be taken with respect to coupons that will mature while the bonds are pledged as security, when such coupons are in excess of the security deposit requirement.

4. If the security deposit is in the form of a bill of exchange, Canada will deposit the bill of exchange in an open account in the Consolidated Revenue Fund. Bills of exchange that are deposited to the credit of the Consolidated Revenue Fund will bear simple interest, calculated on the basis of the rates which are in effect during the period the deposit is held.

These rates are published monthly by the Department of Finance and are set to be equal to the average yield on 90-day Treasury Bills, less 1/8 of 1 percent. Interest will be paid annually or, when the security deposit is returned to the Contractor, if earlier. The Contractor may, however, request Canada to hold and not cash the bill of exchange, in which case no interest will become payable.

5. Canada may convert the security deposit to the use of Canada if any circumstance exists which would entitle Canada to terminate the Contract for default, but any such conversion will not constitute termination of the Contract.

6. When Canada so converts the security deposit:

(a) the proceeds will be used by Canada to complete the Work according to the conditions of the Contract, to the nearest extent that it is feasible to do so and any balance left will be returned to the Contractor on completion of the warranty period; and

(b) if Canada enters into a contract to have the Work completed, the Contractor will:

(i) be considered to have irrevocably abandoned the Work; and

(ii) remain liable for the excess cost of completing the Work if the amount of the security deposit is not sufficient for such purpose. "Excess cost" means any amount over and above the amount of the Contract Price remaining unpaid together with the amount of the security deposit.

7. If Canada does not convert the security deposit to the use of Canada before completion of the contract period, Canada will return the security deposit to the Contractor within a reasonable time after such date.

8. If Canada converts the security deposit for reasons other than bankruptcy, the financial security must be reestablished to the level of the amount stated above so that this amount is continued and available until completion of the contract period.

9. In this Article,

"security deposit" means

(a) a bill of exchange that is payable to the Receiver General for Canada and certified by an approved financial institution or drawn by an approved financial institution on itself; or

(b) a government guaranteed bond; or

(c) an irrevocable standby letter of credit, or

(d) such other security as may be considered appropriate by the Contracting Authority and approved by Treasury Board;

"approved financial institution" means

(a) any corporation or institution that is a member of the Canadian Payments Association;

(b) a corporation that accepts deposits that are insured by the Canada Deposit Insurance Corporation or the Régie de l'assurance-dépôts du Québec to the maximum permitted by law;

(c) a credit union as defined in paragraph 137(6) of the Income Tax Act;

(d) a corporation that accepts deposits from the public, if repayment of the deposits is guaranteed by a Canadian province or territory;

(e) the Canada Post Corporation.

"government guaranteed bond" means a bond of the Government of Canada or a bond unconditionally guaranteed as to principal and interest by the Government of Canada that is:

(a) payable to bearer;

(b) accompanied by a duly executed instrument of transfer of the bond to the Receiver General for Canada in accordance with the Domestic Bonds of Canada Regulations;

(c) registered in the name of the Receiver General for Canada.

"irrevocable standby letter of credit"

(a) means any arrangement, however named or described, whereby a financial institution (the "Issuer"), acting at the request and on the instructions of a customer (the "Applicant"), or on its behalf,

(i) will make a payment to or to the order of Canada, as the beneficiary;

(ii) will accept and pay bills of exchange drawn by Canada;

(iii) authorizes another financial institution to effect such payment, or accept and pay such bills of exchange; or

(iv) authorizes another financial institution to negotiate, against written demand(s) for payment, provided that the conditions of the letter of credit are complied with.

(b) must state the face amount which may be drawn against it;

(c) must state its expiry date;

(d) must provide for sight payment to the Receiver General for Canada by way of the financial institution's draft against presentation of a written demand for payment signed by the authorized departmental representative identified in the letter of credit by his\her office;

(e) must provide that more than one written demand for payment may be presented subject to the sum of those demands not exceeding the face amount of the letter of credit;

(f) must provide that it is subject to the International Chamber of Commerce (ICC) Uniform Customs and Practice (UCP) for Documentary Credits, 2007 Revision, ICC Publication No. 600.
Pursuant to the ICC UCP, a credit is irrevocable even if there is no indication to that effect; and

(g) must be issued (Issuer) or confirmed (Confirmer), in either official language, by a financial institution that is a member of the Canadian Payments Association and is on the letterhead of the Issuer or Confirmer. The format is left to the discretion of the Issuer or Confirmer.

7.15 Foreign Nationals (Canadian Contractor)

The Contractor must comply with Canadian immigration requirements applicable to foreign nationals entering Canada to work temporarily in fulfillment of the Contract. If the Contractor wishes to hire a foreign national to work in Canada to fulfill the Contract, the Contractor should immediately contact the nearest Service Canada regional office to enquire about Citizenship and Immigration Canada's requirements to issue a temporary work permit to a foreign national. The Contractor is responsible for all costs incurred as a result of non-compliance with immigration requirements

7.16 Sub-Contracts and Subcontractor 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.

7.17 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.

7.18 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.

7.19 Trade Qualifications

The Contractor must use qualified, certificated (if applicable) and competent trades people 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 trades people. This request should not be unduly exercised but only to ensure qualified trades people are on the job.

7.20 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.

7.21 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.

Introduction

Project management refers to system integration and technical control as well as business management of the CCGS Griffon Refit Requirement.

The Contractor must provide the following within 5 days of Contract Award:

Project Action Plan (PAP):
The PAP must comprise:

iv) organization structure charts;
v) a master schedule, support schedules, sub-Contractor schedules and work;
vi) Government Furnished Equipment (GFE), and Contractor Furnished Equipment (CFE) delivery dates as a minimum.

The monthly updates to the PAP must comprise schedule updates, a progress report and review meetings. The components of the PAP and its updates are described in the following sub-sections.

1) Project Integration Management:
The Contractor must provide an overall project organizational chart identifying all key personnel and sub-Contractors. Further, the Contractor must identify the contract-related work each sub-Contractor is responsible for.

2) Change Management Log:
The Contractor must provide a Change Management Log that must be used for the duration of the project to manage project changes.

The Change Management Log must track project issues with the following criteria:

i) Individual tracking number;
ii) Date issue was raised;
iii) Expected resolution date;
iv) Date issue was resolved;
v) Brief note of resolution on issue;
vi) Individual who raised issue;
vii) Individual assigned to resolve issue;
viii) Risk Factor.

3) Risk Management Plan:
The Contractor must identify emergent risks and rank these risks by impact on the work. Mitigation strategies must be identified for all “High” risks. The “Risk Management Plan” must be updated at least bi-weekly and provided to the Technical and Contracting Authorities. The “Risk Management Plan” must

be included in the monthly progress meeting Record of Decisions.

4) Scheduling:
The Contractor must provide a schedule(s) that breaks the work down to the system and component level. The schedule must include sub-Contractor and FSR schedules to the same level. The Contractor must update the schedule(s) on a weekly basis and the updates must be submitted electronically in MS Project 2013 or equivalent format to the Contract Authority,
and the Technical Authority by close of Business each Monday until the end of the project.

The schedule(s) must be base-lined.

The schedule(s) must identify at a minimum the following elements ;

a) Major Milestones
b) The Work Breakdown Structure (WBS) on at least three or more levels for each section of the Specification package. More specifically, the WBS must include the strip outs, production, assembly, installation, bench testing, system commissioning and tests and trials, the expected and required resources, and the necessary sea trials;
c) Predecessors and successors;
d) The start and end dates for each item;
e) The critical path to the acceptance of the work;
f) The subcontractors' and FSR schedules up to the same level;
g) Long lead items and GFE;

The PMBOK eighth edition must be used as the reference for scheduling.

5) Project Reporting:
The Contractor must provide a monthly Progress Report describing the status of the project Time Line, Cost and Performance as an introduction. Time, Cost and Performance must then be addressed in detail, clearly demonstrating earned value using Cost Performance Index (CPI) and Schedule Performance Index (SPI). The report must identify significant risks to the program and the actions taken to resolve these risks. The risk analysis must identify any impact upon delivery and actions taken to recover any slippage that may affect the contract delivery date. The report, either in hard copy or in electronic format, must be delivered monthly, three (3) working days prior to the progress review meeting to the Contract Manager, the Inspection Authority and the Technical Authority. The progress report must include sub-Contractor and major component supplier activity.

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

7.22 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.

For details refer to Annex G - Quality Control / Inspection

7.23 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.

For details refer to Annex G - Quality Control / Inspection

7.24 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.

For details refer to Annex G - Quality Control / Inspection

7.25 Environmental Protection

The Contractor and its subcontractors 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 noncompliance situations, must be competent to do so on the basis of appropriate education, training, or experience.

7.26 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.

7.27 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 is accordance with the Contractor's submitted and accepted procedures.

7.28 Fire Protection, Fire Fighting and Training

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

7.29 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.

For details refer to Annex I Deliverables / Certifications – I2 Deliverables after Contract Award.

7.30 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 W47.1-09, Certification for Companies for Fusion Welding of Steel (Division Level 1 or 2); and

   (b) W47.2-11, Certification for Companies for Fusion Welding of Aluminum (Division Level 1 or 2).

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.

7.31 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 F – Procedure for Processing Unscheduled Work.

7.32 Vessel Manned Refits

SACC Manual Clause A0032C (2011-05-16) Vessel Manned Refits. For details refer to

Annex I – Vessel Custody

7.33 Pre-Refit Meeting

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

7.34 Progress Review Meetings

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

During each PRM the Contractor shall provide a status of the overall contracted project, including programmatic, production, test, Integrated Logistics Support, subcontract, risk issues, and progress as it relates to the Project Action Plan (PAP) and Schedule, and the associated Work Breakdown Structure. For each PRM, the Contractor shall:

(a) Ensure that Contractor data, personnel and facilities are available for each formal meeting in order that the meetings may be conducted in an efficient manner; and

(b) Include the following agenda items for discussion and resolution:

i. PAP and updates;
ii. Contractual Issues;
iii. Financial Issues;
iv. Technical Issues;
v. Environmental, Health and Safety Issues; and
vi. Previous action items.

The PWGSC CA or authorized representative will chair the PRMs and will approve decisions prior to adjourning the PRM, with the resulting decisions reflected in the Meeting Minutes.

7.34.1 Weekly update meetings, chaired by the Contracting Authority, will take place by teleconference, generally once a week. Call In Co-ordinates and timings to be provided by Contract Authority at the Pre-Refit meeting. Contractor attendees at these meetings will, as a minimum, be its Contract (Project)

Manager, and Project Planner. The following agenda Items will be for discussion and resolution

i. Schedule Update
ii. Technical Issues
iii. Contractual Issues

7.35 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.

For details on Acceptance Procedures and Reports refer to Annex I – Vessel Custody

7.36 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.

7.37 Stability

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

7.38 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.

7.39 Title to Property - Vessel

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

7.40 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.

7.41 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 fifteen (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.

7.42 Failure to Deliver

Time is of the essence for the Contract. It is essential that the Work be delivered within or at the time stated in 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.

7.43 Care, Custody and Control

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

7.44 Permits, Licenses and Certificates

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.

7.45 Export Licenses:

Where material is to be imported into Canada, the Contractor is responsible for obtaining all necessary export licenses from the country of origin in sufficient time to enable the export.

7.46 Equivalency of Equipment

(a) The Contractor guarantees that the equipment to be delivered under the Contract is:

(i) equivalent in form, fit, function and quality to the existing equipment owned by Canada that was described in the bid solicitation that resulted in the Contract; and

(ii) fully compatible, interchangeable and interoperable with the existing equipment owned by Canada.

(b) The Contractor also guarantees that any warranties with third parties concerning the existing equipment owned by Canada will not be adversely affected by Canada's use of the equipment delivered under the Contract (for example, by interconnecting the equipment) or by any other services provided by the Contractor under the Contract. If Canada determines in its sole discretion that any such warranty has been adversely affected, at Canada's sole option, the Contractor must:

(i) pay to Canada the amount that Canada must pay to the original supplier (or an authorized reseller of that supplier) to re-certify Canada's existing equipment for warranty purposes and any other amounts paid by Canada to a third party in order to restore the equipment to full warranty status;

(ii) perform all warranty work on Canada's existing equipment in place of the original supplier; or

(iii) pay to Canada the amount that Canada must pay to the original supplier (or an authorized reseller of that supplier) to perform maintenance work on the equipment that otherwise would have been covered by the warranty.

(c) The Contractor agrees that, during the Contract Period, if Canada determines that any of the equipment is not equivalent in form, fit, function and quality to the existing equipment owned by Canada or is not fully compatible, interchangeable and interoperable with the existing equipment owned by Canada, the Contractor must immediately and entirely at its own expense take all steps necessary to ensure that the equipment satisfies these requirements (for example, by implementing any additional software or firmware), failing which Canada will have the immediate right to terminate the Contract for default. The Contractor agrees that, if Canada terminates the Contract for this reason, the Contractor must pay to Canada the costs of reprocuring the equipment from a third party and the difference, if any, in price paid by Canada to the third party. The Contractor acknowledges that its failure to deliver equivalent equipment that satisfies the above requirements may result in the Contractor (as well as its affiliates and any other entities with whom the Contractor or its principals do not deal at arm's length) being unable to propose equivalent substitutes in response to future PWGSC bid solicitations.

7.47 Travel and Living Expenses - National Joint Council Travel Directive

The Contractor will be reimbursed its authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for profit and/or administrative overhead, in accordance with the meal, private vehicle and incidental expenses provided in Appendices
B, C and D of the National Joint Council Travel Directive and with the other provisions of the directive referring to "travellers", rather than those referring to "employees".

All travel must have the prior authorization of the Contracting Authority.

All payments are subject to government audit.

7.48 Government Supplied Material

Government Supplied Material (GSM) is the property of the Government of Canada. The Contractor is responsible for maintaining satisfactory records of the disposition of all GSM. The GSM described herein must be used in the manufacture of the item(s) contracted. Only the quantity of material stated herein will be supplied by Canada without charge. If GSM does not conform to requirements for incorporation into the Work, the Contractor shall make a request for replacement GSM in writing to Canada within 30 days after the receipt of GSM. At Canada's instruction, the Contractor shall replace or repair any GSM, at

the prices and In Accordance with Contract provisions relating to Unscheduled Work. The Contractor shall replace or make good, at its own expense, any GSM which fail to conform to the Contract requirements as a result of faulty or inefficient cutting, manufacture or workmanship by the Contractor.

In the event of problems with the GSM supplied, the Contractor shall advise the Contracting Authority immediately, identifying the specific problem. Should the Contractor proceed without guidance from the Contracting Authority, any costs incurred, and loss of GSM shall be at the Contractor's expense.

The Contractor shall repair or replace at its own expense GSM that is damaged or lost while in the Contractor's care.

While a final GSM accounting is not automatically required for every Contract, Canada reserves the right to request a final accounting at any time within one year of the Contract completion date.

The following items will be supplied as Government Supplied Material (GSM) for the CCGS Griffon:

Annex A Reference	Item	Quantity
7.7.7.3	Oil to replenish steering gear system.	225L Hydrex AW100 50L Hydrex AW22
8.1.4 & 8.4.3	Major Components of HVAC System:	
	Air handler	1
	Condensing unit	1
	Thermostat	1
	Water regulating valve	1
	Raw water feed valve	1
	Return valve	1
	By-pass valve	1
	Flex lines to condensing unit raw water feed and return	2
10.3.2.3	Antenna Mount	1
11.1.3	Steel Weather-tight Doors	4
12.3.3.5	Isolamin Bulkhead Panels	66
12.3.3.7	BIP Joiner Ceiling Panels	82
16.4.4.1	Supply Fan	1
	Exhaust Fan	1
	Control Panel	1
	Remote Stop pushbuttons	2
16.4.6.1	Control Panel	1
16.4.8.1	Module Blocks	As Required
17.3.4.1	Reach-in Freezer	1
17.3.4.2	Reach-in refrigerator	1
17.3.4.3	Galley range and deep fryer	1
17.3.4.5	Under-counter refrigerator	1
17.3.4.6	Dishwasher	1
17.3.4.7	New Square Electric Wells	3
	Round Wells	2
17.3.4.8	Cabinets	2
	Combi-Oven	1
	Hood and Support Cabinet	1
	Water Filtration System	1
	Steamer Cabinet and Stand	1
17.3.5.1 &17.3.5.2	Joiner Systems Monoblock Ceiling System (incl. components)	20
17.3.5.3	Air Diffusers	3
17.3.5.4	Access Hatch for the Galley Re-Heater	1
17.3.5.5	Grounds	108

17.3.6.1	Galley Lighting Fixtures	9 x 48” 3 x 24”
17.3.7.3	Stainless Steel Isolamin Galley Panels and Joining Strips:	
	Panels	11
	Joining Strips	11
18.6.4	Flex Line	4
19.1.1	Searchlights	2
19.3.7	Saco Mimic Panels	2
20.3.2.1	Scanner Heating Components:	
	Circuit Breaker	1
	Control Panel	1
	Thermostat	1
29.1.3	Wheelhouse Engine Order Telegraphs:	
	Centre console	1
	Wing units	2

ANNEX A - STATEMENT OF WORK - SPECIFICATIONS

See Attached Document: CCGS Griffon Floating Refit 2016 - Rev 6 - Specification No: 814.15

ANNEX B - BASIS OF PAYMENT

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

A)	Known Work For work as stated in PART 7 - article 7.1, specified in Annex A and detailed in the attached Annex H – Appendix 1 - Pricing Data Sheet for the FIRM PRICE of:	$
B)	Applicable taxes of line A) only:	$
C)	Total firm Price including Applicable Taxes [A) + 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 applicable taxes, 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 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 this section 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 Charge-out 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 following charge-out labour rates:

a. Time and One Half**: $ _____per hour; or

b. Double Time***: $ _____per hour

This rate shall be a blended rater for all classes of labour, engineering and foreperson and shall include all overheads, supervision and profit.
These rates will remain firm for the duration of the Contract, including all amendments and are subject to audit if considered necessary by Canada.

* Regular time is defined as an 8 hour work day.
** Time and One Half is defined as time in excess of the Regular Time*.
*** Double Time is defined as Sundays and Statutory Holidays.

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:

B5.1: Ship Services: include all costs for ship services such as water, steam, electricity, etc., required for vessel maintenance for the duration of the Contract.

B5.2: Docking and Undocking include:

a. all costs resulting from dry docking, 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.

B5.3: Field Service Representatives/Supervisory Services: include all costs for field service representatives/supervisory services including manufacturers' representatives, engineers or other technical personnel as specified. The Contractor is responsible to schedule all subcontractors and FSRs and their respective performances.

FSR daily expenses will be charged separately once the work is completed by submitting for adjustment a PWGSC Form 1379. These daily expenses will need to be submitted in accordance with Article 7.47 of the Contract.

For adjustment purposes, the Contractor is required to submit with the Form 1379 FSR daily time sheets signed by the IA and as well as daily expenses. Canada will not be responsible for time lost, standby time or delays that are not caused by Canada. It is the contractor's responsibility to schedule and plan for an optimal FSR presence.

The Contractor may be authorized to charge for admissible FSRs costs when unscheduled work requiring these services is added to the Contract.

B5.4: 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.

B5.5: Sheltering, Staging, Cranage and Transportation: include the cost of all sheltering, staging including handrails, cranage and transportation to carry out the Work as specified.

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

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.

ANNEX C to PART 5 - BID SOLICITATION

FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY – CERTIFICATION

I, the Bidder, by submitting the present information to the Contracting Authority, certify that the information provided is true as of the date indicated below. The certifications provided to Canada are subject to verification at all times. I understand that Canada will declare a bid non-responsive, or will declare a contractor in default, if a certification is found to be untrue, whether during the bid evaluation period or during the contract period. Canada will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply with any request or requirement imposed by Canada may render the bid non-responsive or constitute a default under the Contract.

For further information on the Federal Contractors Program for Employment Equity visit Employment and Social Development Canada (ESDC) – Labour's website (http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page).

Date:_____(YYYY/MM/DD) (If left blank, the date will be deemed to be the bid solicitation closing date.)

Complete both A and B.

A. Check only one of the following:

( ) A1. The Bidder certifies having no work force in Canada.

( ) A2. The Bidder certifies being a public sector employer.

( ) A3. The Bidder certifies being a federally regulated employer being subject to the Employment Equity Act.

( ) A4. The Bidder certifies having a combined work force in Canada of less than 100 employees (combined work force includes: permanent full-time, permanent part-time and temporary employees [temporary employees only includes those who have worked 12 weeks or more during a calendar year and who are not full-time students]).

A5. The Bidder has a combined workforce in Canada of 100 or more employees; and

( ) A5.1. The Bidder certifies already having a valid and current Agreement to Implement Employment Equity (AIEE) in place with ESDC-Labour.

OR

( ) A5.2. The Bidder certifies having submitted the Agreement to Implement Employment Equity (LAB1168) to ESDC-Labour. As this is a condition to contract award, proceed to completing the form Agreement to Implement Employment Equity (LAB1168), duly signing it, and transmit it to ESDC-Labour.

B. Check only one of the following:

( ) B1. The Bidder is not a Joint Venture.

OR

( ) B2. The Bidder is a Joint venture and each member of the Joint Venture must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification. (Refer to the Joint Venture section of the Standard Instructions)

ANNEX D - INSURANCE REQUIREMENTS

D1. 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.

D2. 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 a similar program)

h. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority with 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 twelve (12) months after the completion or termination of the Contract. Employees and, if applicable, Volunteers must be included as Additional Insured.

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.

D3. Environmental Impairment Liability Insurance

1. The Contractor must obtain Contractor's Pollution Liability insurance, providing coverage for Asbestos Abatement, 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 $5,000,000 per accident or occurrence and in the annual aggregate.

2. 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.

3. The Contractor's Pollution 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 as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.

   b. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.

   c. Separation of Insureds: 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.

   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. Incidental Transit Extension: The policy must extend to losses arising from any waste, products or materials transported, shipped, or delivered via any transportation mode to a location beyond the boundaries of a site at which the Contractor or any entity for which the Contractor is legally liable is performing or has performed the operations described in the contract.

   f. Lead and Asbestos Abatement: The policy must provide coverage for the removal and disposal of asbestos material.

   g. Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:
Director Business Law Directorate,
Quebec Regional Office (Ottawa),
Department of Justice,
284 Wellington Street, Room SAT-6042,
Ottawa, Ontario, K1A 0H8

For other provinces and territories, send to:

Senior General Counsel,
Civil Litigation Section,
Department of Justice
234 Wellington Street, East Tower
Ottawa, Ontario K1A 0H8

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

ANNEX E – WARRANTY

Warranty Procedures

E1. Scope

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

E2. 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.

E3. 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 Appendix 1 – Warranty Claim Form 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 man-hours expended in correcting the defect are to be recorded and entered in Section 5 of the warranty defect claim by the Technical Authority who will forward the warranty defect claim to the PWGSC Contracting Authority for action. Defective parts of equipment are to be retained pending settlement of claim.

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

E4. Liability

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

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

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

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

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

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

ANNEX E – APPENDIX 1

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. – Numero de série de reclamation de garantie
Contractor - Entrepreneur		Effect on Vessel Operations – Effet sur des opérations de navire Critical Degraded Operational Non-operational Critique Dégradé Opérationnel Non-opérationnel ☐ ☐ ☐ ☐

1. Description of Complaint – Description de plainte

Contact Information – Information de contrat

Name – Nom

Tel. No. – N° Tél

Signature – Signature

Date - Date

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

3. Contractor's Corrective Action – La modalité de reprise de l'entrepreneur	
Contractor name and signature – Nom et signature de l'entrepreneur	Date of corrective action – Date de mesures correctives
Client name and signature – Nom et signature de client	Date - Date

4. PWGSC Review of Warranty Claim Action – Examen d'action de reclamation de garantie par TPSGC	
Signature – Signature	Date - Date

5. Additional Information – Renseignements supplémentaires

ANNEX F – PROCEDURE FOR UNSCHEDULED WORK

F1. 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.

F2. 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 by the Contracting Authority, except under emergency circumstances as 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.

F3. 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 (A Contractor owned 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 and any qualifications, remarks or other information as 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 and 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 material, including stocked items. The Contractor shall provide a minimum of two quotations for subcontracts or material. If other than the lowest or sole source is being recommended for quality and/or delivery considerations, this shall be noted. Upon request by 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 confirmation from the Technical Authority to proceed with the work by signing the form noted above in sub paragraph 3(d). The Contracting Authority will then sign and authorize the unscheduled work to proceed.

i. In the event that the Technical Authority does not wish to proceed with the work, the Contracting Authority will cancel the proposed unscheduled work in writing.

j. In the event the negotiation involves a credit, the appropriate PWGSC form will be noted 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 unscheduled work should not be unduly delayed and should be processed as follows:
   - The Contractor will complete PWGSC 1379 form indicating the estimated cost and provide it to the Contracting Authority.
   - If the Technical Authority wishes to proceed, both the Technical Authority and the Contracting Authority will sign the completed PWGSC form. It will be understood and accepted that this cost will be a ceiling price cost and therefore only subject to downward adjustment.
   - A serial number will be allocated and will include 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: PWGSC forms bearing serial numbers with a suffix A shall not be included in any contract amendments and therefore no payment shall be made until final resolution of the prices and subsequent incorporation into the contract have been completed.

F4. Amendment to Contract or Formal Agreement

The contract will be amended from time to time in accordance with the contract terms in order to incorporate costs that have been authorized on the proper PWGSC form(s).

ANNEX G – QUALITY CONTROL / INSPECTION

G1 Quality Control Plan

The Contractor must implement and follow the Quality Control Plan (QCP), prepared in accordance with the latest issue (at contract date) of the ISO 10005 : 2005 Quality Management – Guidelines for quality plans, approved by both 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 form the elements of the specified quality requirements to the corresponding paragraphs in the QCP. The QCP must be made available to both 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 as and 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.

G2 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 (QCP). 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 ITP is to be coded for identification clearly demonstrating a systematic approach similar to the following (Contractor’s system should be defined in its QCP):
        i. Prefixes for Inspections, Tests 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 test – 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.

G3 Inspection and Test Plan Criteria

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

1. All ITPs must be prepared by the Contractor in accordance with the above criteria, its quality plan and must provide the following reference information:
    a. the ship’s name;
    b. the specification number item;

c. equipment/system description and a statement defining the parameter which is being inspected;
d. a list of applicable documents referenced or specified in the inspection procedure;
e. the inspection, test or trial requirements specified in the specification;
f. the tools and equipment required to accomplish the inspection;
g. the environmental conditions under which the inspections are to be conducted and the tolerances on the inspection conditions;
h. 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;
i. name and signature of the person who prepared the plan, date prepared and amendment level; and
j. names and signatures of the persons conducting and witnessing the inspection, test or trial.

2. Contractor Imposed Testing:

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

   b. Amendments: Amendment action for the ITPs 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.

G4 Conduct of Inspection

1. Inspections must be conducted in accordance with the ITP and as detailed in G4.

2. The Contractor must provide its own staff or subcontracted staff to conduct inspections, test and trials; excepting that Technical Authority or Inspection Authority personnel may be designated in the specification in which case the Contractor must ensure that its own staff are provided in support of such inspection, test and/or 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 and/or trial.

4. The Contractor must ensure that personnel required for equipment operation and records taking during the inspection, test and/or trial are briefed and available at the start and throughout the duration of the inspection, test and/or 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 and/or trial and ensure that safe conditions prevail throughout the inspection, test and/or trial.

G5 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 and/or trial results for which corrective action cannot be completed during the normal course of the inspection, test and/or trial will require the Contractor to establish and record the cause of the unsatisfactory condition to the satisfaction of the Inspection Authority. Representatives to Canada may assist in identification where appropriate.

4. Corrective action to remove the 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 and/or 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.

G6 Inspection and Trials Process

1. Drawing 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 the Discrepancy Notice. The resolution of any such discrepancy is a matter for consultation between the Contractor and other Crown Authorities.

NOTE: 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/or trials as may be deemed necessary by the Inspection Authority to permit them 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 (NCR).

   c. The Contract requires the implementation of a Quality Assurance/Quality Control (QA/QC) system so the Inspection Authority requires the Contractor to 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 the reports of these inspections must be submitted before the Work is inspected by the PWGSC Inspection Authority.

   d. Incorrect or false QA/QC documentation submitted to the Inspection Authority prior to inspection of the Work the Inspection Authority may issue an Inspection non-conformance report against the Work. In addition, a separate report may be issued against 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 rejections standards to be applied. Where more than one standard or requirement are applicable, the order of precedence in the Contract will identify the priority.

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 update the report with applicable signature and date.

   c. At completion 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 and in accordance with the Contract and specification, the Contractor must schedule, co-ordinate, perform and record all specified tests, trials and demonstrations required.

   b. Where the specification contains a specific performance requirements for any component, equipment, sub-system or system the Contractor must test each 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 perform as per specification.

   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-system demonstrations or testing, and that the sub-systems are proven before system demonstration or testing.

   d. Where the specification does not contain specific performance requirements of 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 ITP as detailed in G2.

   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, subcontractors 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 G5. The Contractor may utilize the PWGSC Standards 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 commencement of or continuation with any sea trials for any reasonable cause, including but not limited to:

      i. adverse weather;
      ii. visibility;

iii. equipment failure or degradation;
iv. lack of qualified personnel; and
v. inadequate or non-compliance with safety standards.

ANNEX H – FINANCIAL BID PRESENTATION SHEET

H1 Price for Evaluation:

A)	Known Work For work as stated in Part 1 – GENERAL INFORMATION, article 1.2, specified in Annex A – Statement of Work – Specifications (CCGS Griffon) and detailed in the attached ANNEX H – Financial Bid Presentation Sheet – Appendix 1 - Pricing Data Sheet for a FIRM PRICE of:	$_____
B)	Unscheduled Work – Contractor labour cost Estimated labour hours at a firm charge out labour rate including overhead and profit for evaluation purposes only: 4000person4000 person hours x $_____per hour for a PRICE of: See Annex H, article H2.1 and H2.2 below. Overtime premium for time and one half: Estimated hours for evaluation purposes only: 300200 person hours x $_____per hour for a PRICE of: See Annex H, article H3 below. Overtime premium for double time: Estimated hours for evaluation purposes only: 100 person hours x $_____ per hour for a PRICE of: See Annex H, article H3 below.	$_____ $_____ $_____
C)	Daily Service Fees For evaluation purpose only as per Annex H, article H4: Ten (10) working days x $_____firm daily service fee Four (4) non-working days x $_____firm daily service fee	$_____ $_____
D)	Vessel Transfer Cost For evaluation purpose only as per Annex H, article H6: Proposed shipyard/ship repair facility _____	$_____
E)	Ventilated and Heated Shelter For evaluation purposes only as per Annex H, article H7: Ventilated and heated shelter $_____	$_____
F)	Cost to the Bidder of the Contract Financial Security For evaluation purposes only as per Annex H, article H7:	
F)	EVALUATION PRICE [A + B + C + D + E] for an EVALUATION PRICE (applicable taxes excluded) of:	$_____

H2 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 $ _____for the Contractor's firm hourly charge-out labour rate. This rate is to include consumables, overhead and profit. The net laid-down cost of materials which may include a mark-up of ten (10) percent plus applicable taxes. The firm hourly charge-out labour rate and the material mark- up will remain firm for the duration of the Contract including any subsequent amendments.

H2.1: Notwithstanding definitions or usage elsewhere in the Contract 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.

H2.2: 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 as entered in section H2 above.

H2.3: The ten (10) percent mark-up rate for material will also apply to subcontracted costs. The mark-up rate includes any allowance for material and subcontract management not allowable in the charge out 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.

H3 Overtime

The Contractor must not perform any overtime under the Contract unless authorized in advance 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. Overtime shall not be paid unless authorized in writing by the Contracting Authority. Payment for authorized overtime will be calculated as follows:

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

a. Time and One Half**: $ _____ per hour; or

b. Double Time***: $ _____ per hour

This rate shall be a blended rate for all classes of labor, engineering and foreperson and shall include all overheads, supervision and profit.

These rates will remain firm for the duration of the Contract, including all amendments and are subject to audit if considered necessary by Canada.

* Regular time is defined as an 8 hour work day

** Overtime Time and One-Half Rate is defined as time in excess of the regular time*,.

*** Overtime Double Time Rate is defined as Sundays and Statutory Holidays Pro-rated Prices

H4 Daily Services Fees

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 service fee described below for each day the Work is delayed. 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 required 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.

H5 Vessel, Refit, Repair or Docking Costs

The following costs must be included in the price:

1. Ship services: include all costs for ship services such as water, steam, electricity etc. that are required for vessel maintenance for the duration of the Contract.

2. Docking and undocking includes:

   a. all costs resulting from dry docking, 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 of must be included in the evaluation price.

3. Field services representatives/supervisory services: consist of the costs for field service representatives and/or 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 regardless if they are identified in the specification, 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 reinstallation of all items on completion of the Work. The successful Bidder will be responsible for renewal of components damaged while in their custody including during removal or reinstallation.

5. Sheltering, staging, cranage and transportation: include the cost of all sheltering, staging including handrails, carnage 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 in order to meet applicable safety regulations.

H6 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 G6, paragraph 2 of this section, which shall be entered into Annex H – Financial Bid Presentation Sheet, H1 Price for Evaluation, item D);

   b. If the list provided under H6, paragraph 2 of this section does not provide the shipyard/ship repair location where the Bidder intends to perform the Work, the Bidder must advise the Contracting Authority of its proposed location for performing the Work in writing at least ten (10) calendar days prior to bid closing date. The Contracting Authority will confirm to the Bidder, in writing, at least five (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 under H6, paragraph 2 of this section and for which a notification in writing has not been received by the Contracting Authority as required, will be considered non-responsive.

2. Vessel information and list of shipyard/ship repair facilities and applicable vessel transfer costs

   Vessels: 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 responsibility related to the vessel being transferred.

   Transfer costs in the case of the 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 Costs (All Prices in CAD)
Manned only: CCGS Griffon

Company	City/Province	Manned Transfer Cost
Caraquet Marine Industry Ltd.	Caraquet, NB	$42,696
Canadian Maritime Engineering Limited	North Sydney, NS	$62,650
Chantier Forillon	Gaspe, QC	$39,085
Chantier Matane	Matane, QC	$27,873
Davie Industries Inc.	Levis, QC	$15,267
Heddle Marine	Hamilton, ON	$13,873

Hike Metal Products Ltd	Wheatley, ON	$24,325
MetalCraft Marine Inc.	Kingston, ON	$3,484
Oceans Industries Inc.	Saint-Bernard-Sur-Mer, QC	$18,244
Shelburne Ship Repair	Shelburne, NS	$68,858
Verreault Navigation Inc.	Les Mechins, QC	$29,329

H7 Ventilated and Heated Shelter

The evaluation price must include the cost for providing and maintaining a ventilated and heated shelter as required. The requirement to provide the shelter lies solely with the Contractor. Failure to protect the Work and/or the Ship that causes deficiencies and/or damages will result in the Contractor repairing the damage to the level of Annex A - Statement of Work at no additional cost to Canada.

ANNEX H – Appendix 1 – PRICING DATA SHEET

Ref #	Spec #	Description	Total Hours	Total Labour Cost ($)	Total Material Cost ($)	Total FSR & Sub-Contractor Cost ($)	Total Firm Price ($)	Unit Cost ($)
2.0		**TOTAL SPEC. 2 SERVICES**		$	$	$	**$**	
	2.2	Berthing		$	$	$	$	
	2.3	Mooring Lines		$	$	$	$	
	2.4	Gangways		$	$	$	$	
	2.6.5	Electrical Power - Estimated Consumption Of 150,000 Kw-Hr		$	$	$	$	
	2.6.5	Unit Rate/Kw-Hr For Estimated Consumption Of 150,000 Kw-Hr						$
	2.7.7	Potable Water – 10m^3/Day For Duration Of Contract		$	$	$	$	
	2.7.7	Unit Rate/M^3 For Estimated Consumption Of 10m^3/Day						$
	2.10.1	Cranage – 15 Hrs. For Duration Of Contract	15	$	$	$	$	
	2.10.1	Unit Rate/Hr For Crane Supply						$
	2.11	Garbage Removal – Supply And Emptying Of 5 M^3 Dumpster (Min. Every 4 Days) For Duration Of Contract		$	$	$	$	
5.0		**TOTAL SPEC. 5 - BILGEBILGE CLEANING**		$	$	$	**$**	
	5.3.1.4	Removal And Disposal Of 20m^3 Of Oily Waste		$	$	$	$	

6.0		**TOTAL SPEC. 6 - ENGINEENGINE ROOM SUPPLY AND EXHAUST FAN OVERHAUL**		$	$	$	**$**	
7.0		**TOTAL SPEC. 7 – STEERING GEAR WORK (SURVEY ITEM)**		$	$	$	**$**	
	7.2.1	FSR (MMH Marine) – 150 Hours Based On MMH's Daily Rate	150	$	$	$	$	
	7.2.2	FSR (Alliance Nav.) – 50 Hours Based On Alliance's Daily Rate	50	$	$	$	$	
	7.7.3.4	DisposalOf 300 Litres Of Used Oil		$	$	$	$	
	7.7.5.5	Fit Tiller To The Stock – Quote On 5 Fits		$	$	$	$	
8.0		**TOTAL SPEC. 8 – MACHINERY CONTROL ROOM (MCR) HVAC SYSTEM**		$	$	$	**$**	
9.0		**TOTAL SPEC. 9 – GREY WATER PIPING REPLACEMENT**		$	$	$	**$**	
10.0		**TOTAL SPEC. 10 – MOUNTING OF IRIDIUM ANTENNA**		$	$	$	**$**	
11.0		**TOTAL SPEC. 11 – REPLACEMENT OF WEATHERTIGHT DOORS**		$	$	$	**$**	
12.0		**TOTAL SPEC. 12 – SHOWER STALL REFURBISHMENT**		$	$	$	**$**	

13.0		**TOTAL SPEC. 13 – FSR FOR THE GRIFFON'S FIRE SYSTEMS**		$	$	$	**$**	
	13.1.6	Troy Life & Safety Ltd. – All Inspection Costs Incl. Labour, Overtime, Incidentals, Material, And Travel		$	$	$	$	
14.0		**TOTAL SPEC. 14 – GALLEY EXHAUST FANS**		$	$	$	**$**	
15.0		**TOTAL SPEC. 15 – MEGGER TESTING OF ELECTRICAL CIRCUITS**		$	$	$	**$**	
16.0		**TOTAL SPEC. 16 – STEERING GEAR VENTILATION MODIFICATION**		$	$	$	**$**	
17.0		**TOTAL SPEC. 17 – GALLEY UPGRADE**		$	$	$	**$**	
18.0		**TOTAL SPEC. 18 – SEA WATER PIPING SYSTEMS UPGRADE**		$	$	$	**$**	
		Unit Rate/Hr. for Machining (Full Contract)						
	18.5.4	Machining To Overhaul The Four Main Engine Suction Strainers	40	$	$	$	$	
	18.5.5	Machining To Overhaul The Valves Of 18.5 Main Engine Sea Water Cooling System	80	$	$	$	$	
	18.7.5	Machining To Overhaul The Strainer On The Cooling Water Pump Suction Strainer	10	$	$	$	$	

	18.7.6	Machining To Overhaul The Valves On The Propulsion Motor Cooling Water Piping	40	$	$	$	$	
	18.7.7	Machining To Overhaul The Sight Glasses	20	$	$	$	$	
19.0		**TOTAL SPEC. 19 – INSTALLATION OF FORWARD SEARCHLIGHTS**		$	$	$	**$**	
20.0		**TOTAL SPEC. 20 – INSTALLATION OF RADAR SCANNER HEATERS**		$	$	$	**$**	
21.0		**TOTAL SPEC. 21 – MERCURY ASSESMENT SURVEY**		$	$	$	**$**	
	21.1	Lehder Environmental Services – 50 Hours Based On Lehder's Daily Rate	50	$	$	$	$	
22.0		**TOTAL SPEC. 22 – ASBESTOS MATERIAL SURVEY**		$	$	$	**$**	
	22.1.3	Pinchin LeBlanc Environmental – 50 Hours Based On Pinchin LeBlanc's Daily Rate	50	$	$	$	$	
23.0		**TOTAL SPEC. 23 – SUPPLY AND INSTALL NEW SHOREPOWER BOX**		$	$	$	**$**	
24.0		**TOTAL SPEC. 24 – BREAKER COORDINATION AND ARC FLASH HAZARD ANALYSIS STUDIES**		$	$	$	**$**	

25.0		**TOTAL SPEC. 25 – POTABLE WATER TANK PIPING SYSTEM UPGRADE**		$	$	$	**$**	
	25.4.5	Machining To Overhaul The Valves In Potable Water Fill System	20	$	$	$	$	
	25.5.3	Machining To Overhaul The Valves In Potable Water Suction System	20	$	$	$	$	
26.0		**TOTAL SPEC. 26 – ELECTRICAL POWER TERMINATION MAINTENANCE**		$	$	$	**$**	
27.0		**TOTAL SPEC. 27 – FUEL TRANSFER MANIFOLD OVERHAUL**		$	$	$	**$**	
	27.5.9	Machining Related To The Overhaul Of The Fuel Transfer Manifold	80	$	$	$	$	
28.0		**TOTAL SPEC. 28 – FALL ARREST POINTS**		$	$	$	**$**	
29.0		**TOTAL SPEC. 29 – REPLACEMENT OF WHEELHOUSE TELEGRAPHS**		$	$	$	**$**	
		TOTALS		**$**	**$**	**$**	**$**	

ANNEX I - DELIVERABLES / CERTIFICATIONS

I1 Mandatory Tender Deliverables Check List
Notwithstanding deliverable requirements specified within the bid solicitation and its associated Statement of Work (Annex A), mandatory deliverables that must be submitted with the Bidder's tender to be deemed responsive, are summarized below.

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

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

Item	Description	Completed and Attached
1	Invitation to Tender document part 1, page 1, completed and signed;	
2	Completed Annex H - Financial Bid Presentation Sheet, clauses H1 through H7;	
3	Completed Pricing Data Sheet, as per Annex H – Appendix 1, as detailed in PART 3, article 3.2, Section II;	
4	Completed Annex I1 Deliverables/Certifications;	
5	Changes to any applicable laws as per PART 2 – Bidder Instructions, article 2.4;	
6	Integrity provisions – Associated information, as per PART 5 – Certifications, 5.1.1;	
7	Vessel transfer cost as per Annex H – article H6, 2;	
8	Docking Facility, as per clause 6.4	
9	Proof of good standing with the Workers' Compensation Board, as per PART 6 – Financial and other Requirements, article 6.5;	
10	Proof of valid Labour Agreement or similar instrument covering the work period, as per PART 6 – Financial and other Requirements, article 6.6;	
11	Preliminary work schedule as per PART 6 – Financial and other Requirements, article 6.7;	
12	Fueling and Disembarking Procedures as per PART 6 – Financial and other Requirements, article 6.8;	
13	If registered its valid ISO 9001-2008 Certification, as per PART 6 – Financial and other Requirements, article 6.9;	
14	Objective evidence of documented Health and Safety System as per PART 6 – Financial and other Requirements, article 6.10;	
15	Objective evidence of documented Fire Protection, Fire Fighting and Training Procedure as per PART 6 – Financial and other Requirements, article 6.11;	
16	Insurance Requirements as per PART 6 – Financial and other Requirements, article 6.13;	
17	Proof of welding certification as per PART 6 – Financial and other Requirements, article 6.14;	
18	Project Management as per PART 6 – Financial and other Requirements, article 6.15;	
19	List of subcontractors as per PART 6 – Financial and other Requirements, article 6.16;	
20	Example of its Quality Control Plan as per PART 6 – Financial and other Requirements, article 6.17;	
21	Example of an Inspection and Test Plan as per PART 6 – Financial and other Requirements, article 6.18;	
22	Details of Environmental Emergency Response Plan, Details of Formal Environmental Training as per PART 6 – Financial and other Requirements, article 6.19.	

I2 Deliverables after Contract Award

Item	Description	Reference	Due
1	Insurance requirements as per Annex D	Article 7.12 and Annex D	Ten (10) working days after Contract Award
2	Revised work schedule	Article 7.17	five (5) calendar days after Contract Award
3	The Contractor's Quality Control Plan	Article 7.22	five (5) calendar days after Contract Award
4	The list of Government specialized loaned equipment that the Contractor intends to request	Article 7.29	Three (3) calendar days after Contract

CCGS Griffon Floating Refit 2016
Rev 5

Specification No: 814.15

Date: May 20, 2016

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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

1.2.1.1 The work period for this contract is August 10, 2016 until November 2, 2016.

1.3 References

1.3.1 Applicable documentation:

FSSM Procedures	Title	Included Yes/No		
7.B.2.	Fall Protection	Yes		
7.A.1.	Hazard Prevention Program	Yes		
7.B.3.	Entry Into Confined Spaces	Yes		
7.B.4.	Hotwork	Yes		
7.B.5.	Lockout and Tagout	Yes		
10.A.7.	Contractor Liability	Yes		
1.3.2	Publications:			
TP3177E	Standard for the Control of Gas Hazards in Vessels to be Repaired or Altered			
T127E	Transport Canada Marine Safety Electrical Standard			
IEEE 45	Recommended			

	Practice for Electrical Installation on Ships			
70-000-000-EU-JA-001	Specification for the Installation of Shipboard Electronic Equipment			
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			

1.3.2 Acts & Regulations:

- 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 must 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 must attend an on board 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 to note CCG provides this orientation. The Contractor will have access to an uncontrolled copy of the Fleet Safety and Security Manual.

1.4.3 The Contractor must 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 aboard.

1.4.4 For the purpose of the Lock Out/Tag Out procedure the Contractor must 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 must supply a copy of a certified marine chemist or other qualified person's Gas Free Certificate to the Technical Authority where any work must be carried out in tanks or bilge areas prior to commencing work. The certificates must specify, "Safe for persons" or "Safe for hot work" as appropriate. All Certificates must be posted in full view and adjacent to the opening of the compartment.

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

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

1.5 Access to Worksite

1.5.1 The Contractor must 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 MSDS documentation 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 must ensure that every employer, and any person acting on behalf of an employer, must ensure that persons refrain from smoking in any work space under the control of the employer. The Contractor must 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 must 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 must take digital pictures of each area showing the outfit therein and download the photos in JPG format onto a CD or DVD. Each picture must 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 must 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.

1.8.4 Upon completion of this contract, the Contractor must be responsible for the removal and disposal 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 must perform a 'walk through' of the vessel to view all areas where work was performed by the Contractor. Any deficiencies or damage noted must 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 must be repaired by the Contractor at no cost to the Coast Guard.

1.9 Touch-up / Disturbed Paint

1.9.1 Unless stated otherwise the Contractor must supply and apply two coats of marine primer compatible with the vessel's existing coating system to all new and/or disturbed metal surfaces.

1.9.2 The Contractor must prepare all new and disturbed steelwork to the paint manufacturer's standards prior to painting.

1.10 CCG Employees and Others on the Vessel

1.10.1 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 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.

1.10.2 The Coast Guard will be contracting Fairbanks Morse to supply a Field Service Representative (FSR) for approximately 3 weeks of the work period. This FSR will be

required to assist the Griffon's engine room staff perform the overhaul work on the ship's main engines.

1.10.3 The Coast Guard will be contracting Caterpillar to supply a Field Service Representative (FSR) for approximately 1 week of the work period. This FSR will be required to remove and install the fuel injection pumps off the Griffon's 3 CAT 3406 ship service generators. These fuel pumps will be overhauled and calibrated at the manufacturer's test facility.

1.11 Regulatory Inspections and/or Class Surveys

1.11.1 The Contractor must 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.

1.11.2 The Contractor must convene a meeting of the Contractors Project Manager for the work of this specification, the attending TCMS surveyor, and the TA, no less than 3 weeks before the scheduled start date of this project. The purpose of this meeting is to confer with all parties and determine the inspection and testing requirements of TCMS for the work of this specification.

1.11.3 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.

1.11.4 The Contractor must not substitute inspection by the TA for the required TCMS regulatory inspections or Class surveys.

1.11.5 The Contractor must provide no less than 48 hours notice to TCMS and TA of the starting or completion of a work item, and of the reaching of an inspection point such that TCMS and TA can witness the conduct of the work or perform an inspection.

1.11.6 The Contractor must ensure the TCMS inspector has the opportunity to inspect all materials to be installed on the vessel prior to the commencement of work. The Contractor must ensure all materials have their associated heat numbers and mill test reports available to the TCMS inspector.

1.12 Test Results and Data Book

1.12.1 The Contractor must develop a Test and Trials Plan which must include as a minimum, all tests and trials stated in the specification. This plan must be provided for TA review one week prior to the originally scheduled Tests and Trials commencement.

1.12.2 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.

1.12.3 Recorded dimensions must be to a precision of three decimal places (unless otherwise stated) in the measuring system currently in use on the vessel.

1.12.4 The Contractor must 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.

1.12.5 Should extra or new work be added to the contract, the Test and Trials Plan must be updated by the Contractor to reflect the additional inspection, testing and trials that have taken place.

1.12.6 Hard copy reports must be bound in standard 3-ring binders, type written on letter size paper and indexed by specification number. Electronic copies must be in unprotected Adobe PDF format and provide on CD-ROM media. The Contractor must provide 3 hard copies and 1 electronic copy of all reports.

1.12.7 All documentation from the contract period must be inserted in a data book and delivered to the TA on completion of the contract.

1.12.8 For any drawings requested, the drawings must be plotted on standard ANSI paper size paper – minimum ANSI B (11" x 17"). Three copies must be provided.

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

1.13 Contractor Supplied Materials and Tools

1.13.1 The Contractor must ensure all materials are new and unused.

1.13.2 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.

1.13.3 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.

1.13.4 The Contractor must provide all equipment, devices, tools and machinery such as welding machines, cranage, staging, scaffolding and rigging necessary for the completion of the work in this specification.

1.13.5 The Contractor must provide waste disposal services for any oil, oily waste or other hazardous or controlled waste generated by the work of this specification. The Contractor must provide provincial government waste disposal certificates for all of the above generated waste and the disposal certificates must indicate that the disposal was in accordance with Federal, Provincial and Municipal regulations in effect.

1.14 Government Supplied Materials & Tools

1.14.1 All tools are Contractor supplied unless otherwise stated in the technical specifications.

1.14.2 Where tools are supplied by the TA they must 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.

1.14.3 Any Government supplied material (GSM) must 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.

1.15 Restricted Areas

1.15.1 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.

1.15.2 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.

1.16 Contractor Inspections and Protection of Equipment and the Worksite

1.16.1 The Contractor must coordinate all 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.

1.16.2 Any damage incurred as a result of the Contractor's work and that is attributable to the Contractor's work performance must 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.

1.16.3 The Contractor must 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 Recording of Work in Progress

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

1.18 List of Confined Spaces

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

1.19 Lead Paint and Paint Coatings

1.19.1 The Contractor must not use lead based paints.

1.19.2 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 must 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. Results of the lead testing must be a deliverable for this contract.

1.19.3 The Contractor must have in place a Lead Paint Abatement Program in order to deal with any lead paint discovered in the course of this specification.

1.19.4 Any expenses due to lead remediation (containment, disposal, etc.) will be covered by 1379 action.

1.19.5 The Contractor must provide HC product approval for underwater hull surface paints controlled by HC and the Pest Management Regulatory Agency.

1.20 Asbestos Containing Materials

1.20.1 The Contractor must not use any asbestos containing materials.

1.20.2 Handling of any asbestos containing materials must 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 Manual. The Contractor must provide the TA with disposal certificates for all asbestos containing material removed from the vessel indicating that the disposal was in accordance with Federal, Provincial and Municipal regulations in effect.

1.21 Removed Materials and Equipment

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

1.22 Welding Certification

1.22.1 For any item requiring the application of fusion welding for steel structures, the Contractor or his Sub-Contractors must be certified in accordance with the Canadian Welding Bureau, CSA\ACNOR W47.1; Division 2 certification – latest revision.

1.22.2 For any item requiring the application of fusion welding for stainless steel structures, the Contractor or his Sub-Contractors must be certified in accordance with the Canadian Welding Bureau, CSA\ACNOR AWS; Division 16 certification – latest revision.

1.22.3 For any item requiring the application of fusion welding to aluminum structures, the Contractor or his Sub-Contractors must be certified in accordance with the Canadian Welding Bureau, CSA\ACNOR W47.2; Division 2 certification – latest revision.

1.22.4 The Contractor must provide documentation to the Technical Authority clearly identifying the welding certification of all employees performing any welding included in this specification.

1.23 Electrical Installations

1.23.1 All electrical installations and repairs must 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.

1.23.2 All installations of electronic equipment must 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".

2.0 SERVICES

2.1 General

2.1.1 The Contractor must supply the following services to the vessel for the entire work period and disconnect upon completion of the work period. The Contractor must 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 must be separately priced in the Contractor's submitted bid.

2.1.3 The Contractor must be responsible for supplying all material, hoses, cables etc. and labor required to connect and disconnect the services to the vessel. Unless otherwise stated these services must be available 24 hours a day 7 days a week for the entire contract period. The Contractor is responsible to be available at all times to correct outages should they occur.

2.1.4 All staging, cranage, screens, lighting and any other support services, equipment and materials necessary to carry out the work identified in these specifications must 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 must 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 must 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 must be responsible for providing the necessary mooring lines and labor required to secure the vessel alongside the facilities. Ship's mooring lines are not to be used.

2.4 Gangways

2.4.1 Contractor must supply the labor 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 must 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.

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

2.5 Telephone Services

2.5.1 Not used.

2.6 Electrical Power

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

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

2.6.3 The Contractor must 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 must be carried out by certified electricians.

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

2.6.5 The Contractor must 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 must be determined at the end of the contract once the meter has been read The final power consumption total must be adjusted up or down by PWGSC 1379 action.

2.7 Potable Water Supply

2.7.1 The Contractor must provide a 2 inch diameter sized hose, disinfected and certified for use for potable water only, to supply potable water to the vessel. Water must be supplied through a calibrated pressure regulator and calibrated water meter, complete with pressure gauge and isolation valve. Potable water pressure must be capable of being regulated between 40 to 100 psig. The dock connection must 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. A valid calibration certificate for the water meter must be a deliverable for this contract.

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

2.7.3 The water must be supplied through a suitable backflow prevention device from an approved municipal drinking water supply system that has been certified safe for consumption. (Reference CCG FSSM 7A12 Potable Water Quality paragraphs 3.2 Shore Supply, 3.6 Potable Water Testing, 3.7 Connections to the Potable Water System).

2.7.4 At the start of the contract the Contractor must provide the TA with a copy of recent water test results for the potable water being supplied to the vessel showing the following parameters from the current *Guidelines for Canadian Drinking Water Quality*. Acceptable maximum values are shown to the right of each test parameter.

2.7.4.1 Health-based Objectives:

- Antimony 0.006 mg/L
- Barium 1.0 mg/L
- Benzene 0.005 mg/L
- Boron 5.0 mg/L
- Cadmium 0.005 mg/L
- Chromium 0.05 mg/L
- E. Coli 0 per 100ml
- Ethylbenzene 0.14mg/L
- Fluoride 1.5 mg/L
- Lead 0.01 mg/L
- Mercury 0.001 mg/L
- Nitrate/Nitrite 45 mg/L
- Selenium 0.05 mg/L
- Total Coliform 0 per 100ml
- Turbidity 1 NTU
- Uranium 0.02 mg/L
- Xylenes 0.9 mg/L

2.7.4.2 Aesthetic Objectives

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

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

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

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

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

2.8 Non Potable Water

2.8.1 Not Used.

2.9 Black and Grey Water Service

2.9.1 Not Used

2.10 Cranage

2.10.1 The Contractor must 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 must quote on providing this service for 15 hours over the duration of the contract. The 15 hours of cranage must not include transit or assembly of the crane prior to commencing lifts.

2.10.2 The crane capacity - lift height and SWL - must be sufficient to perform all work within this specification.

2.11 Garbage Removal

2.11.1 A garbage container or dumpster of 5 cubic meters must be located adjacent to the vessel. The garbage container must be emptied as required if full or at a minimum every 4 days. Ship's personnel must comply with any recycling programs that the Contractor has in place, provided the appropriate containers are made available.

2.11.2 If required by the Contractor, the Contractor may also supply a green bin for food waste. The green bin must be emptied daily.

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) (DFO 5737 – Latest Version)
FRC	Fast Rescue Craft
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
MCR	Machinery Control Room
HVAV	Heating ventilation and Air Conditioning
AHU	Air Handling Unit
HMI	Human Machine Interface

4.0 GENERAL PARTICULARS OF EXISTING VESSEL

Name: CCGS Griffon

Type: Twin Screw, Medium Icebreaker / Navaids 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.

5.0 BILGE CLEANING

5.1 Identification

5.1.1 The Contractor must 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 must 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 hot work can be carried out safely in the engine room, motor room, and shaft compartment.

5.2 References

5.2.1 Drawings:

Drawing Number	Drawing Title	Electronic File Name
664-AF-507	General Arrangement Profile & Superstructure Decks	G05111ga1.pdf
664-AF-507	General Arrangement Profile & Superstructure Decks	G05111ga2.pdf

5.3 Technical

5.3.1 Initial Bilge Cleaning

5.3.1.1 The Contractor must clean all bilge areas such that they can be certified safe for man 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 must be maintained for the duration of the contract.

5.3.1.3 All bilge cleaning must be completed before any hot work commences in the following sections:

a. Grey Water Piping Replacement
b. Sea Water Piping Replacement
c. Fresh Water Piping Replacement

5.3.1.4 The Contractor must 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 must be removed and disposed of ashore in accordance with Federal, Provincial and Municipal regulations in effect at the time of the contract. The Contractor must 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 must 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 must have the Technical Authority inspect the bilges for cleanliness once the work is completed.

5.4.2 The bilge cleaning will be done to the satisfaction of the Technical Authority.

5.4.3 The Contractor must provide the Technical Authority with all copies of waste oil manifests showing the disposal of the materials removed from the vessel's bilges.

6.0 ENGINE ROOM SUPPLY AND EXHAUST FAN OVERHAUL

6.1 General

6.1.1 The Coast Guard has the requirement to overhaul the two engine room supply air fans and the two engine room exhaust fans on the Griffon.

6.1.2 Details of the exhaust fans:

- Manufacturer: Woods
- Size: 24” LB Tub axial Fan,
- Electrical: 1.5 HP, 1750 RPM, 460 Volt.

6.1.3 Details of the supply fans:

- Manufacturer: Woods
- Size: 30” LB Tub axial Fan,
- Electrical: 12 HP, 850/1750 RPM, 460 Volt.

6.1.4 The exhaust fans are located in the engine casing at the wheelhouse deck.

6.1.5 The supply fans are located at in the ER air intake plenum in the engine casing at the wheelhouse deck. References

6.2 References:

Drawing Number	Drawing Title	Electronic File Name
130922	Sectional Arrangement of AF1542/45 FMO “L” “S” & MKI	130922.pdf
664-1215-10 Sh 2of 5	Machinery Spaces Ventilation	G05A1077.pdf

6.2.1 CCGS Griffon Engine Room Fan Manual.pdf

6.3 Technical

6.3.1 The exhaust fans must be electrically isolated, disconnected and removed from air ducting to facilitate cleaning and inspection of the fan and ducting.

6.3.2 The exhaust fans and motors are to be thoroughly de-greased and cleaned.

6.3.3 The supply fans cannot be removed from the ER air intake plenum so the fan casings will remain in place. Access to the fan motor is possible from the air intake and access hatches.

6.3.4 The supply fan motors are to be removed from the fan housings.

6.3.5 The fan motors are to be dismantled, windings meggered, cleaned, and new bearings installed.

6.3.6 The bearing grease lines are to be flushed with fresh grease.

6.3.7 The fan is to be re-installed with new 1/8” reinforced neoprene gaskets at the flange faces.

6.4 Commissioning

6.4.1 The Contractor must demonstrate the functionality of the fans to the TA.

6.5 Documentation

6.5.1 When the cleaning and fan overhaul is complete, the Contractor must provide a report to the Technical Authority and the Inspection Authority indicating the scope of work performed on the four fans.

6.5.2 The report must also include details of the work performed on the fan motor including megger results, parts used, and observations.

7.0 STEERING GEAR WORK (SURVEY ITEM)

7.1 General

7.1.1 Work done in the 2015 dry-dock revealed a poor fit between the steering gear tiller and the rudder stock . This must be rectified.

7.1.2 The tiller is to be removed, built up with weld if required, and then re-machined to obtain a good fit on the rudder stock.

7.1.3 The tiller is too large to remove through the steering gear compartment entrance points so a removal route is required.

7.1.4 While this removal route is available, the opportunity will be used to remove the main steering gear hydraulic rams for refurbishment.

7.1.5 The contractor must coordinate with the TA prior to decommissioning the steering gear system.

7.1.6 All material in this spec section is contractor supply.

7.2 Field Service Representative

7.2.1 The Contractor must provide the services of MMH Marine Inc. for the work contained in this section of the specification.

MMH Marine Inc.
2151 Margot Street
Oakville, Ontario
L6H 3M5
Phone: 905-842-5995
Email: *mmhmarineinc@aol.com*
Contact: Martin Higgins

The Contractor will bid on an allowance of one hundred and fifty hours at the daily rate of the MMH Marine Inc. FSR for the purpose of this Section.

7.2.2 The Contractor must provide the services of Alliance Nav. Inc. for all work for setup and commissioning of the Sperry electronic steering equipment.

Alliance Nav Inc.
6535 Chemin St. Francois
St. Laurent, Quebec, Canada
H4S 1B6
Tel: (514) 338-1960
Fax: (514) 338-1967
Email: tdossantos@alliancenav.com
Contact: Tony Dos Santos

The Contractor will bid on an allowance of fifty hours at the daily rate of the Alliance Nav. Inc. FSR for the purpose of this Section.

7.3 References

7.3.1 Drawings:

Drawing Number	Drawing Title	
664-31-1	Rudder Plan	Griffon Rudder Plan.pdf
664-31-2	Rudder Stock	Griffon Rudder Stock.pdf
664-30-1	Sternframe	Griffon Stern Frame.pdf
C16-09-084-01 Rev1	Tiller Arm Removal	C16-09-084-01 Rev1 task 1.pdf

7.3.2 Documents:

- Hastie Steering Gear Manual Griffon.pdf
- Class Approved Tiller/Rudder Stock Repair Plan
- KPM Report – CCGS Griffon Steel Analysis

Regulations:

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

7.4 Gas-Freeing and Certification of Areas for Hot Work

7.4.1 The Contractor must certify the following spaces safe for hot work:

- Steering gear compartment.

7.5 Rigging

7.5.1 The Contractor must be responsible for all materials and labor required for rigging and transporting equipment and material into and from the steering gear compartment. 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 must be approved by the Chief Engineer prior to installation. The Contractor must be responsible for proof testing the lifting lugs to 200% the SWL prior to using them.

7.6 Protection of Existing Equipment

7.6.1 The Contractor must 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 must 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.

7.7 Technical

7.7.1 Steering Gear Details

7.7.1.1 Existing gear consists of a 4 ram Hastie's electric hydraulic steering gear.

7.7.2 Strip Out Requirements – Removal Route

7.7.2.1 The contractor will remove, and retain for installation, all items in way of the approved removal route.

7.7.2.2 The contractor will remove, and retain for installation, all items in way of any new lifting points that are to be installed.

7.7.2.3 The contractor will remove and retain for installation all items that may be in way of lifting gear before it is used. This is to prevent damage to existing systems.

7.7.2.4 The contractor must coordinate with the TA prior to removing any items, to ensure that proper system isolations and lock-outs have taken place.

7.7.2.5 Items to be removed may include but may not be limited to: perforated sheathing, insulation, wire ways, lighting, internal communication systems, piping, fire detection equipment, motor controller cabinets, and escape ladder.

7.7.2.6 The contractor must refer to the approved removal route reference documents and drawings.

7.7.3 Decommissioning

7.7.3.1 The contractor must coordinate with the TA prior to decommissioning the steering gear system.

7.7.3.2 The rudder is to be centered and secured from outside of the vessel. Cables or chains of sufficient strength are to be used. There is a securing hole on the top aft edge of the rudder for this purpose. The contractor is responsible for all diving costs associated with this work.

7.7.3.3 Power to the steering system including steering pumps, telemotor pumps and controls, and steering selector switch box must be isolated and locked out.

7.7.3.4 The contractor must drain the main and telemotor systems of all hydraulic fluids, including the tanks, rams and associated piping. The contractor must quote on disposing of 300 litres of used oil.

7.7.3.5 The Contractor must provide copies of waste oil manifests showing that the materials removed from the Steering Gear Compartment were disposed of in accordance with Federal, Provincial and Municipal regulations in effect at the time.

7.7.4 Disassembly

7.7.4.1 The following components must be removed in order to perform the work required:

- Starboard steering gear pump and motor. Motor feed wire to be stripped back and secured – wire support to be removed.
- Starboard telemotor ram and piping to be removed. Starboard telemotor feedback unit to be disconnected and removed.
- The starboard telemotor stand is to be cut 6” from the tanktop and removed. Off line filter wiring to be disconnected.
- All steering gear piping to the starboard rams to be removed. Starboard relief valve to be removed.
- All hunting gear to be dismantled and removed. The center located feedback (not used) is to be disconnected.

- Trunion pins and blocks to be removed.
- The contractor must unship the hydraulic tank from the starboard steering ram casting and support it for the duration of the work.
- The collision chocks are to be removed to allow freeing up of the starboard side ram castings.
- The starboard side ram casting is to be removed outboard to allow removal of the rams.
- The rudder stock tiller is to be unshipped and removed from the vessel.
- The rudder stock is to be supported and the carrier bearing assembly to be removed to allow access to the upper portion of the rudder stock.

7.7.5 Tiller and Rudder Stock Repair

7.7.5.1 The contractor must refer to the approved tiller repair reference documents and drawings.

7.7.5.2 The contractor must in situ machine the upper portion of the rudder stock in way of the tiller contact area in order to ensure a perfectly round surface. The contractor must remove as little metal as possible in order to achieve a true contact surface.

7.7.5.3 The contractor must machine the tiller mating faces to reduce the bore size of the tiller. If required, the tiller bore may have to be built up with weld metal in some areas. The tiller will then be assembled and bored to match the new rudder stock dimensions.

7.7.5.4 The contractor must machine the key to suit the new tiller to stock fit.

7.7.5.5 The contractor must verify the fit of the tiller to the stock and hand fit the tiller to the stock. For bid purposes the contractor must quote on 5 fits. The contractor must also verify the fit of the key to the tiller and ensure the tiller makes good contact along both sides of the key length.

7.7.5.6 The contractor is to achieve a final fit which satisfies the approved repair plan as well as the local TCMS Surveyor.

7.7.6 Steering Gear Repair

7.7.6.1 The contractor must refer to the approved hydraulic ram repair reference documents and drawings.

7.7.6.2 The contractor must machine as necessary and re-chrome the steering gear rams to restore the surface to original condition.

7.7.6.3 The contractor must remove the guide bushes of the four cylinder glands and re-bush them with new material. The clearances will be determined by the FSR.

7.7.6.4 The contractor must renew all ram packing of the four rams.

7.7.6.5 The contractor must renew the two trunnion pins and four trunnion blocks. Dimensions and stock materials to be determined by the FSR.

7.7.6.6 The contractor must machine the trunnion pin ram bores to accept the new trunnion pins.

7.7.7 Steering Gear Re-Assembly

7.7.7.1 The contractor must re-assemble the steering gear under the direction of the FSR.

7.7.7.2 The contractor must use all new seals and gaskets for the re-assembly.

7.7.7.3 The Coast Guard will supply the oil to replenish the system.

7.7.8 Steering Gear Set Up

7.7.8.1 The Contractor must verify the set up and alignment of all linkages for the hunting gear system. The Contractor must set up the hunting gear such that all remote rudder angle indicators and the actual rudder position correspond. All hunting gear linkages must be verified as being free to move and that there is no binding in any of the linkages after assembly.

7.7.8.2 The Contractor must test the hunting gear linkages and the movement of the rudder together. The hunting gear must be so adjusted that the rudder does not hit any of its mechanical stops and that the rudder rams do not bottom out in their respective cylinders and cause the hydraulic system safety valves to be lifted.

7.7.8.3 The rudder must be moved in increments of 5 degrees off center position in both the port and starboard direction through the full swing of the rudder to the hard over positions at 35.5 degrees. At each increment of 5 degrees, the hunting gear system and linkages must be verified to ensure that the adjustment of the linkages does not cause the system to hunt or behave erratically. As the rudder approaches the requested helm position, the hunting gear should cause the pumps to come off stroke and not cause any undue over-swing or compensation in the operation of the hydraulic pumps.

7.7.8.4 The Contractor must adjust the main ram packing glands to obtain the correct packing leakage to lubricate the rams.

7.7.8.5 The contractor must adjust the control linkages to the main pumps to obtain the desired performance.

7.7.8.6 Any abnormal behavior of the steering gear system or the hunting gear system as a result of the Contractor's work must be repaired by the Contractor at the Contractor's expense.

7.7.9 Repair of Removal Route

7.7.9.1 The contractor must repair the removal route according to the weld schedule provided in the reference documents.

7.7.9.2 All insulation removed for the removal route must be renewed.

7.7.9.3 All disturbed steel must be repainted according to the ships' coating plan:

- First coat: Interprime Red CPA 234 Red

- Two coats finish: for White Interlac 665 CLB000 for Deck RedRAL3011 Brown Red.

7.8 Commissioning

7.8.1 The Contractor must schedule and co-ordinate the commissioning of the steering gear upon completion of the repairs.

7.8.2 The contractor must verify the correct functioning of the telemotor system and autopilot system.

7.8.3 The contractor must demonstrate that the off line filtration system is functional.

7.9 Inspection, Tests and Trials

7.9.1 The Contractor must be responsible for all labour and equipment required to perform the steering gear testing in the presence of the TCMS surveyor and the Technical Authority.

7.9.2 The Contractor must provide an Inspection and Test Plan to both the TCMS and Technical Authorities for approval prior to the commencement of all steering gear testing.

7.10 Documentation

7.10.1 The Contractor must provide the Technical Authority with copies of the final readings of the tiller machining and fit to the rudder stock.

7.10.2 The Contractor must provide the Technical Authority with copies of the final report of the work performed on the steering gear including clearances for new components supplied.

7.10.3 The Contractor must provide the Technical Authority with all copies of waste oil manifests showing the disposal of the materials removed from the vessel's steering gear system.

8.0 MACHINERY CONTROL ROOM (MCR) HVAC SYSTEM

8.1 Identification

8.1.1 The Coast Guard has a requirement to replace the HVAC system for the Machinery Control Room on the Griffon.

8.1.2 At present, the Griffon's MCR is cooled by an air handler/condensing unit located in the transformer room adjacent to the MCR. The air handler draws air from the MCR and returns cooled air via ducts through the MCR port side bulkhead.

8.1.3 Coast Guard wishes to change this to a split system with an air handler in the MCR and a condensing unit in the transformer room. Following the current system removal, two openings become obsolete: the air supply duct (about 20"x9") and the air handling unit intake (about 22"x22"). The integrity of the MCR port side bulkhead is to be restored.

8.1.4 Based upon these requirements, Coast Guard has purchased the major components of the HVAC system. The fitted system is to be removed and the new components installed and commissioned.

8.1.5 In conjunction with new component installation some supply air ducting in the MCR will require modification.

8.2 Gas-Freeing and Certification of Areas for Hot Work

8.2.1 The Contractor must certify the following spaces safe for hot work:

- Machinery Control Room
- Upper and Lower Engine Room
- Transformer Room

8.3 Protection of Existing Equipment

8.3.1 The Contractor must 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 must 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.

8.3.2 The contractor to note that there is extensive electronic equipment located in the machinery control room. Any items damaged must be repaired or replaced at the contractor's expense.

8.4 References

8.4.1 Drawings:

Drawing No.	Drawing Title.	Electronic File No.
C16-09-639-01 Rev1	MCR Portside Bulkhead Repair	C16-09-639-01 Rev1 task 3.pdf
	MCR HVAC Installation Drawings	

8.4.2 Documents

- MCR Condensing unit manual.
- MCR Air Handling Unit Drawings

8.4.3 Government Furnished Materials

- Air handler
- Condensing unit
- Thermostat
- Water regulating valve.
- Raw water feed, return, and by-pass valves.
- Flex lines to condensing unit raw water feed and return.

8.5 Technical

8.5.1 Fitted Installation

8.5.1.1 The fitted air handler/condensing unit is a Carrier Model 50VQDD048LEC501 water cooled heat pump located in the transformer room. This unit consists of a fan/evaporator unit, compressor, and condensing unit.

8.5.1.2 A water regulating valve is exterior to the heat pump. Cooling water arrives in the space via 1” 304 Stainless steel supply piping.

8.5.1.3 Power for the heat pump is from the 240 Volt section of the switchboard in the MCR.

8.5.2 Removals (General)

8.5.2.1 The contractor must provide a licensed HVAC technician to evacuate all halocarbons from the fitted MCR heat pump. The Contractor must provide written documentation from the licensed technician stating that the halocarbons were disposed of according to Provincial Legislation (required for our halocarbon tracking).

8.5.2.2 The contractor must disconnect the heat pump - electrical, refrigeration, and raw water piping - and dispose of the unit.

8.5.2.3 The contractor must strip back and dispose of all insulation and sheathing in way of the return air ducting in the MCR.

8.5.2.4 The contractor must remove and dispose of the supply duct from the MCR port bulkhead to the plenum over the computer station. Note the plenum will be re-used. The contractor must strip back and dispose of all insulation and sheathing in way of the supply air ducting in the MCR

8.5.3 Bulkhead Repair.

8.5.3.1 The contractor must repair the steel bulkhead between the MCR and the transformer room. The contractor must utilize the approved repair plan provided by the Coast Guard.

8.5.3.2 After repair of the bulkhead the contractor must install suitable refrigeration line transit pipes as per the reference documents.

8.5.3.3 The contractor must supply and install new insulation and perforated aluminum sheathing on the MCR side of the bulkhead.

8.5.4 New Equipment Installation.

8.5.4.1 Condensing Unit

8.5.4.1.1 The exact location of the condensing unit will be determined by the Technical Authority. The unit will be located in the transformer in the space vacated by the existing heat pump, or as determined by the physical dimensions of the new unit

8.5.4.1.2 The contractor must install a suitable steel frame welded to the transformer room deck to support the new condensing unit. The contractor must supply construction drawings of the proposed frame to the technical authority prior to installation of the support frame.

8.5.4.1.3 The condensing unit is GFM and will fit in through the transformer room door. The contractor must take extreme care when transporting the condensing unit so as not to damage the components.

8.5.4.1.4 The contractor must install the condensing unit on the steel frame using suitable non-corroding fasteners.

8.5.4.1.5 The contractor must install a new 460 volt feed to the condensing unit. This feed will come from a new circuit breaker on the Non-Essential MCC in the MCR. Contractor must supply suitably sized marine approved cable between this breaker and the condensing unit. The wire route is to be through the existing transits below the MCC to the lower ER, then up to the condensing unit through the transformer room deck. The contractor is responsible for installing a cable stand pipe in the transformer room.

8.5.4.1.6 The contractor must supply and install a new circuit breaker of appropriate size to supply the condensing unit.

8.5.4.1.7 The contractor must install new raw water supply piping from the supply and discharge pipes in and out of the transformer room. The exact route of the piping will be determined by the Technical authority and will depend upon the exact location of the condensing unit.

8.5.4.1.8 All new piping to and from the condensing unit must be 1” 304 stainless steel to match the fitted piping. Where possible piping to be butt weld fittings.

8.5.4.1.9 The new piping must incorporate the water regulating valve (GFM) as well as a water regulating valve by-pass valve (GFM). The contractor must install 1/4” female NPT

pipe saddles on the inlet and outlet pipes near the condenser for pressure gauge connections. The exact locations must be determined by the Technical Authority.

8.5.4.1.10 All new welded piping sections must be pressure tested to 100 psi before installation. The pressure testing is to be witnessed by the Technical Authority. All leaks are to be repaired prior to installation. Where leak repairs are carried out, the Contractor must retest the piping in the presence of the Technical Authority.

8.5.4.1.11 The raw water piping must be suitably supported at intervals not exceeding 3 feet. These supports must be clamped to the pipes and welded to the ship's structure.

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

8.5.4.2 Air Handling Unit Installation

8.5.4.2.1 The air handling unit is small enough to fit in to the MCR doors. The contractor must use extreme care when handling the AHU to avoid damage.

8.5.4.2.2 The AHU is to be positioned in the MCR against the port bulkhead after the bulkhead and sheathing have been restored. The unit is to be secured to the sheathing grounds with suitable fasteners.

8.5.4.2.3 The contractor must install a new 460 volt feed to the AHU. This feed will come from a new circuit breaker on the Non-Essential MCC in the MCR. Contractor must supply suitably sized marine approved cable between this breaker and the AHU. The wire route is to be through the existing transits below the MCC to the lower ER, then up to the AHU. The contractor is responsible for installing a cable stand pipe in the MCR.

8.5.4.2.4 The contractor must supply and install a new circuit breaker of appropriate size to supply the AHU. The breaker will have a 120 VAC UVT option to allow remote shutdown of the air handling unit.

8.5.4.2.5 The Contractor must tie the UVT of the new AHU breaker into the remote shutdown circuit for the ER and Motor Room Fans such that if the remote shutdown button is pressed, all ER, Motor Room and AHU fan will shut down. The current shutdown buttons are located on either side of the ER casing, in the Accomodation alleyways on the Port and Starboard sides.

8.5.5 Refrigeration Piping

8.5.5.1 The contractor must utilize a licensed refrigeration contractor to install new refrigeration piping between the condensing unit and the AHU via the bulkhead transits installed.

8.5.5.2 Refrigeration tubing must be specifically designed for refrigeration and be deoxidized, dehydrated, and sealed in accordance with ASTM B 280. The tubing must

be copper Type "L" and must meet ASTM B 88. All refrigerant lines larger than 3/8" must be hard drawn. All fittings must be long radius, wrought copper.

8.5.5.3 The discharge tubing must be as per the refrigerant component manufacturer installation instructions.

8.5.5.4 All refrigeration pipe connections between the condensing unit and the AHU are to be brazed with silver solder. The piping must be installed in such a way that the number of soldered joints is minimized. At all times during assembly the system is to be kept clean with the use of inert gas when making sweat joints.

8.5.5.5 The contractor must supply and install flexible connections on the suction and discharge refrigeration lines at the condensing unit and AHU. Where threaded pipe connections are required, they must be sealed with Loctite 554 or equivalent.

8.5.5.6 The suction and discharge lines must be insulated along their entire length. Insulation must be a flexible elastomeric type - Armaflex NH, ½" thickness or equivalent.

8.5.5.7 The refrigerant piping must be tested in accordance with guidance drawing provided "Refrigerant Piping Diagram" (Drawing 4219-038-001) . The Contractor is responsible for all materials, labor, and equipment in order to complete the work. The pressure and vacuum tests must be incorporated into the inspection and test plan and must be witnessed by the Technical Authority.

8.5.6 Control System

8.5.6.1 The contractor must mount the thermostat in the MCR in the same location of the fitted thermostat.

8.5.6.2 The contractor must supply and install new control wiring as per the reference drawings. This is to include all wiring between the AHU and condensing unit, AHU and thermostat, condensing unit and thermostat.

8.6 Commissioning

8.6.1 The contractor must provide the services of a licensed refrigeration technician for commissioning of the new MCR HVAC system.

8.6.2 The contractor is to supply all refrigerant for the installation - for bidding purposes the contactor must quote on one 30 lb. cylinder of R407C.

8.6.3 The Contractor must measure and record benchmark operational data from the new system at the end of the commissioning. This data must include all pressures, temperatures, amperages and settings from the CU, AHU during operation.

8.7 Documentation

8.7.1 The Contractor must include the following documentation in the data book:

- Proof of responsible disposal of all halocarbons.
- Drawings of the CU deck support structure.
- Pressure test results for the CU water piping.

•Trials Book containing operational system data when in operation.

9.0 GREY WATER PIPING REPLACEMENT

9.1 General

9.1.1 Replacement of grey water piping in the Upper Motor Room. The piping in question is connected to storm valve 7S at Frame 32, port side, lower deck.

9.2 References

9.2.1 Documents

Doc. Number	Document Title	Electronic file
664-4085-11 sh 1	Sanitary Discharges	G05A 1073.mil
732600	CCGS Griffon Galley Arrangement	732600.dwg

9.3 Technical

9.3.1 General

9.3.1.1 This section of the specification must be coordinated with Galley Upgrade. The intent is that the grey water piping from Galley drains be assessed while the galley equipment and deck are removed.

9.3.1.2 At the discretion of the TA, any branch connections that have been determined not to be in use (i.e. connections have been terminated in the galley), may not be renewed.

9.3.1.3 The piping sections to be replaced are described as follows:

1) Vertical section of 75mm (3”) schedule 40 galvanized grey water piping approximately 1430 mm long behind the Sprinkler Tank at Frame 32, Lower Deck, Port side.

2) From the piping described in 1) a horizontal section of 75mm (3”) galvanized steel and PVC grey water piping running forward approximately 3m (10 feet) long and joining into a 75mm (3 inch) steel spool pipe at the bulkhead penetration at Frame 37.

3) From the piping described in 1) a horizontal section of piping leading aft to Frame 24, and running 2m (6 ft) inboard. It is composed of several separate sections of pipe starting out as 75mm (3 inch) and reducing to 63.5mm (2 ½ inch) prior to transiting the web frame at Frame 30, and reducing to 50mm (2 inch) at frame 24. This section has several branch connections that are connected at wyes in the direction of flow and joined to existing piping by a variety of couplings. (i.e. sleeve type rubber coupling)

4) All 3” and 2” PVC pipe that are connected to or make up part of sections 2) and 3) above must be renewed with steel pipe.

9.3.2 Removals

9.3.2.1 Any air vent trunking removed to facilitate access to the grey water piping must be disconnected at the most convenient plenum connection. Remaining shipside trunking ends must be covered and protect to prevent debris from entering the system. All associated systems connected to the air vents must be properly locked out or isolated to prevent operation during this removal. Any damage to, but not limited to, the trunking, insulation, plenum joints and hangers must be repaired at contractors expense. Removed sections must be stored in a dry secure location.

9.3.2.2 The Contractor must release the section of 75mm (3”) pipe where it is flanged at storm valve 7S.

9.3.2.3 The Contractor must release the horizontal sections of pipe running forward and aft at the extreme ends where the piping is connected by rubber sleeve couplings. All branch pipes connected to the horizontal pipe must be released at their couplings.

9.3.2.4 Any branch connection without a coupling may be cut to facilitate removal. The contractor must ensure that the cuts are clean and square and suitably prepared for use with a Roust-a-bout style coupling on renewal. Any repairs to pipe ends damaged from cutting will be at the contractor’s expense.

9.3.2.5 The Contractor must unbolt all pipe supports and retain the brackets for reuse.

9.3.2.6 The Contractor must remove from the vessel and discard the pipe sections.

9.3.3 Renewal of Piping

9.3.3.1 The Contractor must fabricate new piping from ASTM A53, schedule 40 seamless steel black pipe.

9.3.3.2 The Contractor must ensure the bends in the piping are large radii, similar to the existing piping. Smooth pipe bends in this area are required to prevent plugging at elbows.

9.3.3.3 The Contactor must connect all sections of renewed piping using contractor supplied Roust-a-bout style couplings. The number and location of the couplings must be sufficient to allow for ease of installation, maintenance, and piping renewal in the future. Non roust-a-bout style couplings will not be reused.

9.3.3.4 The Contractor must submit all fabricated steel pipe to inspection by the TA prior to galvanizing. The Contractor must hydrostatic pressure test this pipe to 100 psi in the presence of the TA.

9.3.3.5 The Contractor must hot dip galvanize all fabricated steel pipe prior to installation. Where practical, and upon approval by the TA, sections of the horizontal pipe runs may be fabricated using galvanized pipe.

9.3.3.6 The Contractor must install the new piping sections and new fittings, reinstall all brackets and submit the piping to a leak test in the presence of the TA. The TA will assist in operating the grey water system in order to test for leaks.

9.3.3.7 All branch connections must have wye orientation in the direction of flow. All efforts must be made to ensure branch connections enter a horizontal run of pipe above its mid-line to facilitate drainage.

9.3.3.8 The Contractor must fabricate a new vertical section to be connected to storm valve 7S and have the same configuration as the original pipe. The pipe must have a 45 degree wye connection in the direction of flow for connecting the horizontal section that runs

forward. Connect the horizontal and vertical pipe sections using Roust-a-bout style couplings.

9.3.3.9 The contractor must fabricate, from 3” steel pipe, a new horizontal section that runs forward from the vertical section at Frame 32 to the bulkhead penetration at Frame 37. This horizontal section of pipe may be done in more than one section to facilitate installation. All existing branch connections will be renewed. The scupper drain at Frame 35 (currently blanked) will be proven clear and re-connected as a new branch connection.

9.3.3.10 The contractor must fabricate a new horizontal section that runs aft from the vertical section at Frame 32 to 6 feet inboard at Frame 24. This section is constructed of 2”, 2-½”, and 3” steel and PVC pipe. The contractor will renew the pipe with steel pipe to its “as is” dimensions. This horizontal section may be assembled from shorter sections of pipe to facilitate installation and maintenance. All branch connections are to be renewed.

9.3.3.11 The drain point at Frame 24 will not be renewed. Instead, the horizontal run of pipe must have an accessible clean out at the extreme aft end. The clean out must be oriented down, be wye style in the direction of flow, of a minimum 2” diameter pipe, and with a 2” male NPT threaded end. It must be fitted with a GFM 2” brass ball valve. Exact location to be pointed out by the TA.

9.3.3.12 The contractor must renew, with steel pipe, the 2” branch section of PVC pipe running approximately 6 feet inboard, just aft of Frame 27.

9.3.4 Painting

9.3.4.1 The Contractor must apply two coats of galvanized metal primer to all new piping.

9.3.4.2 The Contractor must apply two coats of Interlac 665 White to all new piping.

9.3.4.3 The Contractor must apply two coats of Interlac 1198 grey marine primer and two coats of white Interlac 665 white to any bracketing new or modified.

9.4 Inspection, Tests, and Trials

9.4.1 The Contractor must submit the fabricated piping and welds to inspection by the TA prior to be sent for galvanizing.

9.4.2 The finished piping must be leak tested in the presence of the TA.

9.5 Documentation

9.5.1 The Contractor must include this item on the Test & Inspection Plan.

9.5.2 The Contractor must submit all MIL test certificates for the piping supplied.

9.5.3 The Contractor must provide a galvanizing report for all fabricated sections that were hot dip galvanized.

9.5.4 The Contractor must update the vessels existing Sanitary Discharge drawing to an “as fitted” condition in way of the Tank Top, Lower Deck, and Upper Deck. The Contractor must provide 3 hard copies, and one electronic copy. The hard copes must be printed on drawing paper, minimum dimensions 34”x48”. The electronic copy is to be in AutoCAD, unlocked, and will become the intellectual property of the Crown.

10.0 MOUNTING OF IRIDIUM ANTENNA

10.1 Identification

10.1.1 The Coast Guard has a requirement to install an Iridium antenna for the new IMEC 3 system.

10.1.2 The antenna must be mounted on the wheelhouse top. The superstructure of the Griffon aluminum so a suitable mount must be fabricated and welded to the wheelhouse top.

10.2 References

10.2.1 Drawings:

Drawing No.	Drawing Title.	Electronic File No.
C16-09-187-02 Rev1	IMIC3 Antenna Seat	C16-09-187-02 Rev1 task6.pdf
664-9000-3 Sht 3 of 3	Flight & Boat, Bridge, Nav. Bridge Decks & Wheelhouse Top Scantlings	G05A0505.pdf
CM738-068-AL	Wheelhouse Top Antenna Layout	CM738-068-AL.pdf

10.3 Technical

10.3.1 Removals

10.3.1.1 The Contractor must remove and retain for reinstallation the deckhead panels in the wheelhouse to provide access to the area of work. The contractor is responsible for all interference items such as lights, grilles, smoke detectors, sprinkler heads, etc.

10.3.1.2 The Contractor must remove the insulation on the surfaces in way of the work and discard it ashore. New Roxul fireproof bat type insulation or equivalent of equal dimensions, fire rating and R-value must be installed once the repair is completed.

10.3.2 Installation of Antenna Mount

10.3.2.1 The contractor must weld a support structure to the wheelhouse top as per the reference drawings.

10.3.2.2 The Contractor must ensure a weld procedure and schedule of welding is developed to prevent distortion of the deck, bulkhead, and adjacent transitional joint in way of the work. The weld procedure must be submitted to the Technical Authority prior to commencement of welding.

10.3.2.3 The Contractor will install the antenna mount. The antenna mount is GFM.

10.3.2.4 The Contractor must apply two coat of marine grade primer to all new and disturbed aluminum.

10.3.2.5 The area of repair must be hose tested prior to installing any bulkhead or deck coverings.

10.3.2.6 All disturbed insulation must be replaced with new material of equal fire rating and R-value.

10.3.2.7 The Contractor must reinstall the deckhead of the wheelhouse and all interference items.

10.4 Inspection, Testing, Trials

10.4.1 Prior to painting, the welds must be hose tested by means of a 2” fire hose (ship supply) charged from the vessel’s fire main in the presence of the Technical Authority. All leaks must be corrected by the Contractor.

10.5 Documentation

10.5.1 The Contractor must provide material test documentation for all materials installed on the vessel as a result of this work to the Technical Authority.

10.5.2 The Contractor must submit the welding procedure to the Technical Authority.

10.5.3 The Contractor must include the testing of this work in the Test and Inspection Plan.

11.0 REPLACEMENT OF WEATHERTIGHT DOORS

11.1 Identification

11.1.1 The Griffon has four weather tight doors fitted which are original and in need of replacement.

11.1.2 The doors are the two on the stack and the two on the emergency generator room.

11.1.3 The new doors are GFM and steel.

11.2 REFERENCES

11.2.1 Drawings:

Drawing No.	Drawing Title.	Electronic File No.
	Griffon Refit 2016 - Weathertight Doors	Griffon Refit 2016 - Weathertight Doors.pdf

11.3 Technical

11.3.1 Removals

11.3.1.1 The contractor must ensure the upper ER stack area is certified Safe for hot work.

11.3.1.2 The Contractor must strip all interior aluminum cladding and insulation from the inside area of each of the four doors to a distance of 6” from the door frame. The cladding and insulation is to be discarded.

11.3.2 The Contractor must release and remove the doors from the ship’s structure. The emergency generator space is aluminum construction so the door is bolted to the bulkheads. The stack doors are on the steel ER casing and are welded in place. .

11.3.3 The Contractor must clean the bulkheads in way of the new door flanges of any weld, paint, gasket material, or sealants once the doors are removed.

11.3.4 Installation of the New Doors

11.3.5 The Contractor must install the new doors on the emergency generator space with stainless steel fasteners through the door flange and bulkhead. Fasteners to be at a minimum 8” spacing. The flange of the door is to be sealed to the bulkhead with Sikaflex 291 sealant.

11.3.6 The Contractor must install the doors on the stack using a continuous weld. In order to avoid distortion of the door frame the contractor must develop and submit a welding plan to the Technical Authority before welding begins.

11.3.7 The contractor must hose test the door prior to re-installing the interior sheathing and insulation.

11.3.8 The contractor must supply and install new marine approved insulation and perforated aluminum sheathing to the interior bulkheads around all four doors. The sheathing is to be fitted to suit the new door frames.

11.3.9 The Contractor must apply two coats of marine primer to the weld area of the stack door frames as well as the interior sheathing of all four doors.

11.4 Tests and Trials

11.4.1 The Contractor must hose test the sealing flange of each door. This test must be witnessed by the TA.

11.5 Documentation

11.5.1 The Contractor must provide a weld schedule prior to installing the stack doors.

12.0 SHOWER STALL REFURBISHMENT

12.1 General

12.1.1 The Griffon has 16 shower stalls in 14 spaces which are to be refurbished.

12.2 References

Drawings:

Drawing No.	Drawing Title.	Electronic File No.
732931	CCGS Griffon Boat, Bridge, and Nav Bridge Deck – Joiner Bulkheads and Linings	732931-1.pdf
732941	CCGS Griffon Poop Deck – Joiner Bulkheads and Linings	732941-1.pdf
732951	CCGS Griffon Upper Deck – Joiner Bulkheads and Linings	732951-1.pdf
732934	CCGS Griffon Ceiling Plan Boat, Bridge, and Nav Bridge Decks	732934-1.pdf
732944	CCGS Griffon Ceiling Plan Poop Deck	732944-1.pdf
732954	CCGS Griffon Ceiling Plan Lower and Upper Decks	732954-1.pdf

Documents: Dex-O-Tex Documentation

12.3 Technical

12.3.1 Shower Stall Description

12.3.1.1 The shower stalls on the Griffon are formed using Isolamin panels. The panels have a "wet side" which is used on the shower side.
12.3.1.2 The Isolamin panels sit on a metal combing welded to the deck. This combing is either steel or aluminum depending upon the deck construction material.
12.3.1.3 The base of the shower is cement formed inside the combing.
12.3.1.4 Some showers have been tiled with ceramic while others are bare Isolamin panels.
12.3.1.5 Shower identification and description:

Shower Number	Description	Location	Details
1	Captain's Cabin	Bridge Deck Midships	Ceramic tile bulkheads, cement base, exposed piping.

2	Third Mate	Boat Deck Port	Ceramic tile bulkheads, cement base, exposed piping.
3	Second Mate	Boat Deck Starboard	Ceramic tile bulkheads, cement base, piping through bulkhead.
4	Chief Engineer	Boat Deck Port Midships	Ceramic tile bulkheads, cement base, piping through bulkhead.
5	Chief Officer	Boat Deck Midships Stbd	Ceramic tile bulkheads, cement base, piping through bulkhead.
6	Ship's Clerk/Spare	Poop Deck FWD Port	Ceramic tile bulkheads, cement base, exposed piping.
7	Senior Engineer	Poop Deck FWD Stbd	Ceramic tile bulkheads, cement base, exposed piping.
8	Logo/2nd Engineer	Poop Deck Stbd	Ceramic tile bulkheads, cement base, exposed piping.
9	3rd Engineer/Spare	Poop Deck Stbd	Ceramic tile bulkheads, cement base, exposed piping.
10	Common Forward	Poop Deck Midships aft	Bare Isolamin bulkheads, cement base, exposed piping.
11	Common Aft	Poop Deck Midships aft	Bare Isolamin bulkheads, cement base, exposed piping.
12	Crew Fwd Stbd	Upper Deck Fwd Stbd	Ceramic tile bulkheads, cement base, exposed piping.
13	Crew Aft	Upper Deck Midships Aft	Ceramic tile bulkheads, cement base, exposed piping.
14	Senior Ratings	Upper Deck Fwd Port	Ceramic tile bulkheads, cement base, exposed piping.

12.3.2 Shower Pans – For all Shower Stalls

12.3.2.1 The contractor must remove and dispose of the cement in the shower pans and take the pans to bare metal.

12.3.2.2 The contractor must present the bases to the TA before any re-installation commences. Any floor drains deemed in need of repair or replacement will be done at this time. Drain repair/replacement work will be considered “work arising” and will be handled under 1379 action.

12.3.2.3 The contractor is to install a Dexotex floor system in the shower pan.

12.3.2.4 The Contractor must supply personnel qualified, skilled and experienced in the installation of Dexotex.

12.3.2.5 The Contractor must adhere to all manufacturers’ specifications and recommendations regarding deck preparation and installation of all flooring products to achieve the required fire ratings of the deck and insulation values of the bulkhead. Special attention must be given to the deck preparation and priming prior to the application of the new deck covering.

12.3.2.6 The Contractor must supply and install the following recommended flooring product to the shower stalls:

- Floor Bondcoat: DEX-O-TEX Magnabond 3.
- Floor Material (A-60 fire rating – Upper Deck Only): DEX-O-TEX Decklite
- Floor Material: DEX-O-TEX _A-70 Latex concrete to build up the stalls.
- Floor Coating Material: DEX-O-TEX Terrazzo "M" Fine (Colour as per slide DFS-10)
- Floor Sealing Product: DEX-O-TEX Clearsealer

12.3.2.7 For the upper deck shower stalls, the final floor coating must be applied in such a manner as to have an A-60 fire rating thickness, generous radii in all corners and coves extending up the combing to align with the Isolamin panels.

12.3.2.8 For shower stalls not on the upper deck fire ratings do not apply.

12.3.2.9 Where coving meets shower stall sills, the joint must be neat, clean and sealed to the stainless steel entrance sill once installed.

12.3.2.10 The Contractor must ensure the final result is a completely sealed and continuous deck and bulkhead impervious to moisture.

12.3.3 Refurbishment of Shower Stalls #10, #11, #12 (2 of), #13 (2 of)

12.3.3.1 The contractor is to remove of and dispose of all Isolamin panels which are exposed to the shower stall.

12.3.3.2 The contractor is responsible for removal and storage until reinstallation of all interference fixtures such as curtain rails, coat hooks, hand rails, towel racks, folding benches, piping guards, soap dishes, and plumbing fixtures.

12.3.3.3 The contractor is responsible for removal and storage for re-installation all ceiling panels and ceiling fittings such as light fixtures, grounds, ventilation grills, and trim profiles.

12.3.3.4 The contractor must remove for re-installation the stainless steel sill guard from each shower stall.

12.3.3.5 The Contractor must renew all Isolamin panels and trim pieces. All Isolamin bulkhead panels are to be GFM. All fasteners are to be stainless steel and contractor supplied.

12.3.3.6 Once the shower pan is faired to the New Isolamin panels the interior of the shower is to be lined with 14 gauge white painted aluminum. This aluminum is to be extended from 2" below the ceiling panels to a minimum 1" below the Isolamin panels in to the shower pan. All seams – aluminum to aluminum, aluminum to Isolamin, and aluminum to Dexotex are to be caulked with clear silicone.

12.3.3.7 All ceiling panels in the shower stall area will be renewed. The BIP ceiling panels will be GFM. The ceiling panels, trim, and all interference items are to be reinstalled in way of the shower stalls with stainless steel fasteners.

12.3.3.8 All shower stall fittings (soap dishes, pipe guards, etc.) which were removed are to be thoroughly cleaned and re-installed using new contractor supplied stainless steel fasteners.

12.3.3.9 The contractor must repair all ceramic tile outside the shower stalls disturbed by the installation of the new Isolamin panels. Contractor to supply and install new tiles and

grout to make the repair. Contractor to match as close as possible the size, colour, and size of ceramic tile.

12.3.3.10 Where flooring is disturbed in an adjacent space (showers 10 and 11) the contractor is to repair the floor and base molding strips with contractor supplied material.

12.4 Tests and Trials

12.4.1 The Contractor must demonstrate functionality of all showers and drains to the TA.

12.4.2 The contractor must demonstrate to the TA that all interference items were re-installed correctly.

13.0 FSR FOR THE GRIFFON'S FIRE SYSTEMS

13.1 General

13.1.1 There is an annual TCMS safety inspection requirement. This will include inspection of all fire detection and prevention equipment on board the vessel including the Griffon's small boats (barge and FRC)

13.1.2 The Contractor must provide the services of National Marine Fire to perform an inspection of this equipment.

13.1.3 It is expected that this inspection will require 3 days to complete, and the removal/installation of the range hood system to take 2 days. .

13.1.4 All systems must be functional for this inspection. The contractor is to arrange for National Marine Fire to come aboard as late in the contract period as possible.

13.1.5 The Galley Range Hood suppression system (Aqua-Blue Model WHDR-250S) is obsolete. It requires replacement with a Class-type approved Marine Galley wet chemical system.

13.1.6 The Contactor must quote on National Marine Fire inspection – this is to include all labour, overtime, incidental, material, and travel costs.

13.2 Contact Information

13.2.1 The contact information for National Marine Fire is:

Troy Life & Safety Ltd. (formerly National Marine Fire)

90 Hamilton Street

Elora, Ontario

N0B 1S0

Tel.: 519-846-0878

Fax: 519-846-1968

Contact: Christina Mina, Account Manager`

Email: christina.mina@troylfs.com

Web Site: **http://www.troylfs.com**

13.3 References

13.3.1 Documentation:

- 2015 Fire Systems Report – CCGS Griffon
- 2015 CO2 Systems and Portable Extinguishers – CCGS Griffon
- 2015 Sprinkler Systems Report – CCGS Griffon

13.4 Technical

13.4.1 Fire Systems

13.4.1.1 The Contractor must inspect, test and certify the Notifier NFS-640 Fire Detection System.

13.4.1.2 The contractor must inspect, test, and certify the work barge and Fast Rescue Craft FM-200 fire suppression systems (3 of).

13.4.1.3 The contractor must inspect, test, and certify the Griffon's fixed CO2 Suppression systems.

13.4.1.4 The contractor must inspect, test, and certify all the Griffon's portable fire extinguishers.

13.4.1.5 The contractor must inspect, test, and certify the Griffon's fixed sprinkler system and all associated components.

13.4.2 Galley Range Hood System

13.4.2.1 The contractor must make safe and remove the Kidde WHDR-250S (Auqa-Blue) wet chemical system from the Griffon. The contractor is responsible for disposing any of the un-used chemical according to all Federal, Provincial, and municipal regulations that may apply.

13.4.2.2 The contractor must supply and install a Kidde WHDR wet chemical system in place of the removed system.

13.4.2.3 The contractor must refer to the Galley Upgrade section of this specification for the layout of the appliances under the range hood. The contractor is responsible for ensuring that the design and installation of the discharge nozzles meets or exceeds the manufacturer's recommendations for flow point calculations.

13.4.2.4 The contractor must ensure that the WHDR cylinder assembly chosen for installation meets or exceeds the manufacturer's recommendations for flow point calculations.

13.4.2.5 The contractor must follow all recommendations by the manufacturer for the installation of the system. The installation must meet, at a minimum, the standards of NFPA 17-A and approval from TC.

13.4.2.6 All penetrations of the range hood are to be made grease tight.

13.4.2.7 Any existing piping that is no longer suitable for use must be removed and disposed of by the contractor.

13.4.2.8 Any new piping required must meet the standards of the manufacturer, and must be installed by the contractor.

13.4.2.9 The contractor must renew the fusible link cables and pulleys.

13.4.2.10 The contractor must ensure that all disconnected systems are re-connected after installation. This is to include:

- Fire Door Hold Back System
- Galley Power Panel NP-31
- Gaylord Ventilator Hood control cabinet
- Fire Alarm System
- Remote Manual Pull Station

13.4.2.11 Once the system has been installed, the contractor must perform a balloon test in the presence of the TA and TCMS. The balloon test must be performed using dry nitrogen gas, and prove the function of all associated alarms and interlocks.

13.4.2.12 The contractor must inspect, test, and certify the Griffon's Galley Range Hood System.

13.5 Documentation

13.5.1 National Marine Fire must provide the TA with written reports detailing:

- Condition of each system or component based upon the inspections.
- Test results of each component or system based upon the testing.
- Defects found on any component or system.
- Repairs made to any component or system.

13.5.2 The reports will be similar to the referenced reports from 2015.

13.5.3 The reports must be acceptable to TCMS surveyor to show the Griffon's systems are in full working order as required for the Griffon's annual TCMS Safety Inspection.

13.5.4 National Marine Fire must supply the TA with approved drawings of Griffon's Galley Range Hood System.

13.5.5 National Marine Fire must supply the TA with 2 copies of certificates showing that the installed WHDR system meets ABS and DNV type approval for Marine Galleys to ISO 15371:2000.

13.5.6 National Marine Fire must supply the TA with 2 paper copies of any manuals relevant to the WHDR-260 system, to be retained on board the vessel.

14.0 GALLEY EXHAUST FAN

14.1 General

14.1.1 Details of the exhaust fan:

- Manufacturer: Canadian Blower and Forge
- Size: 21” LB Tub axial Fan,
- Electrical: 1.5 HP, 1750 RPM, 460 Volt.

14.1.2 The fan is located in the Rescue Specialist locker (this locker will be emptied prior the work period).
14.1.3 The sealing gaskets of this fan are damaged and require replacement.
14.1.4 The fan will be cleaned while it is opened.

14.2 Technical

14.2.1 Fan must be electrically isolated, disconnected and removed from air ducting to facilitate cleaning and inspection of the fan and ducting.
14.2.2 The interior lining of the SAR tech locker must be disturbed to perform this work. The Contractor must be responsible for the removal and replacement of any insulation or linings.
14.2.3 The fan and motor are to be thoroughly de-greased and cleaned.
14.2.4 The fan is to be re-installed with new 3 mm reinforced neoprene gaskets at the flange faces.

14.3 Inspection Tests and Trials

14.3.1 The contractor must demonstrate to the Technical Authority the fan is functional, rotating correctly, and operating normally.
14.3.2 The contractor must open the inspection cover and show the TA that the flange gaskets are in position internally.

15.0 MEGGER TESTING OF ELECTRICAL CIRCUITS

15.1 General

15.1.1 The Contractor must perform a complete Megger survey as per TCMS requirements for all electrical circuits onboard the vessel.

15.2 References

Drawings:

Drawing Number	Drawing Title	
766401 Rev A10	Updated Electrical One Line Diagram CCGS Griffon	766401 A10 2016.dwg

Documents: Megger Report - Griffon Megger Report – 2015, File - .XLS

Standards: TP127E – latest edition.

15.3 Technical

15.3.1 The Contractor must Megger test all electrical circuits on the vessel and must record the readings obtained. The Contractor must update the vessel's 2014 electronic copy of the Megger report file. This report will be provided at commencement of the work.

15.3.2 Testing must be from power leads to ground. All motor circuits must be tested from the main distribution panel to the motor starter and from the motor starter to the motor. The test voltage required for the circuit must be as per the requirements of TP127E.

15.3.3 The Contractor must submit a copy of the updated Megger Report to the TA within 24 hours of completion of the work and within 2 weeks prior to the re-floating of the vessel.

15.4 Inspection, Test and Trials

15.4.1 The Contractor must provide the TA with updated copies of the ship's electronic Megger report in an electronic MS Excel format on CD-ROM media. The Contractor must also provide three (3) paper copies of the report on 8.5 by 11 inch paper.

16.0 STEERING GEAR VENTILATION MODIFICATION

16.1 Identification

16.1.1 The Griffon has a requirement to modify the ventilation of the steering gear compartment.

16.1.2 Presently, the steering gear is naturally ventilated by two mushroom vents. The Coast Guard would like to install forced ventilation fans in the mushroom ducts to increase the air flow to and from the space.

16.1.3 Both mushroom vents are to be removed and modified to suit the new fans and, a new electrical control panel is to be installed in the Steering Compartment complete with all required shutdowns to meet regulatory requirements.

16.1.4 The completed work is to be submitted to class inspection for approval.

16.2 Background

16.2.1 The Griffon's Steering Gear Compartment is ventilated by natural ventilation from the Poop Deck provided by two 12" mushroom vents located between Frame A & B Port and Starboard.

16.2.2 These vent pipes are original construction and were designed with 30" coaming height. The actual height above deck of the pipe within the mushroom is 45".

16.2.3 The pipes are mild steel and all connections are welded. The pipes are terminated at the steering gear deckhead sheathing and are fitted with bellmouths and grills. This allows the accumulated heat from the operation of equipment in the steering gear to ventilate outside.

16.2.4 Each vent is fitted with a lever-operated fire damper that is operated from the Poop Deck.

16.3 References

Drawing Number	Drawing Title	Electronic File Name
C16-09-512-01 REV.0	Steering Flats Aux. Fan Install	C16-09-512-01 Rev1 task 4.pdf
664-1061-1 Sht 1 of 2	Natural Ventilation Arrangement	Part of 664-1061, SH-1.pdf
664-1061-1 Sht 2 of 2	Natural Ventilation Arrangement	Part of 664-1061, SH-2.pdf
10006513-01	Electric Fan Schematic	
AIDI20-00-100	Multi-line axial fan AIDI20-E0	AIDI20-E0-A150A05-J0266 Submittal.pdf
CMG05-102-DE	Upper Deck Plating	CMG05-102-DE upper deck plating sht 1 of 1.pdf
CMG05-108-ST	Steel Profile & Bulkheads & Scantling	CMG05-108-ST steel profile & bulkhead scantling.pdf
CMG05-111-GA	General Arrangement	CMG05-111-GA sht 1 of

		2.pdf
CMG05-140-SE	Construction Section	CMGO5-140-SE construction section sht 1 of 2.pdf

16.4 Technical

16.4.1 General

16.4.1.1 Two (2) new fans are to be installed. The contractor must remove and modify the existing duct on Poop deck, build two (2) fan casings and install the fans.

16.4.1.2 The Contractor must be responsible for all labor, materials and equipment unless otherwise identified as GFM.

16.4.1.3 The following equipment is GFM:

- Supply and Exhaust Fans
- Control Panel
- Remote Stop pushbuttons

16.4.2 Removals

16.4.2.1 The contractor must remove and retain for further reinstallation any finishing cladding, light, or equipment in way of work area or otherwise subject to be damaged during the contract.

16.4.2.2 The contractor must remove and dispose of thermal insulation otherwise damaged and replace with new equivalent material after work completion.

16.4.2.3 The Contractor must remove the steering gear compartment natural ventilation ducts above the Poop deck and modify them as per drawing C16-09-512-01. The ducts below the Poop deck must remain unchanged. The steering compartment and all its equipment must be protected from the ingress of smoke, grindings, dirt, grime, sparks and rainwater for the duration of the work.

16.4.2.4 All removals required in order to perform the hotwork and complete the installation in this specification are the responsibility of the Contractor.

16.4.2.5 The Contractor must remove the vents to Contractor's facility and perform the required modification to the vents according to the guidance drawings provided.

16.4.3 Structural Requirements

16.4.3.1 The Contractor must perform the necessary changes to each vent according to the guidance drawings provided. The Port vent must be modified to accommodate the supply fan and the Starboard vent must be modified to accommodate an exhaust fan.

16.4.3.2 The Contractor must build and install two fan casings following reference drawings C16-09-512-01. The casings are to be installed in way of the actual natural vent lines, welded to the Poop Deck. The modified mushroom will be welded to the fan casing cover. The cover is bolted to the fan casing.

16.4.3.3 The Contractor is to note the drawings provided are for guidance only. It is the Contractor's responsibility to verify all dimensions prior to commencing the work.

16.4.3.4 The Contractor must submit a weld schedule to the Chief Engineer for approval prior to commencing the welding. The weld schedule must take into account that no distortion to the new flanges will be tolerated that will adversely affect the watertight seal of the new fans.

16.4.4 Equipment Installation

16.4.4.1 The Contractor must install the following GFM equipment following reference drawings C16-09-512-01:

- Supply Fan
- Exhaust Fan
- Control Panel
- Remote Stop pushbuttons

16.4.4.2 All fasteners must be stainless steel with lock washers. The gaskets and fasteners must be new and Contractor supply.

16.4.4.3 The Contractor must install the vents to the Poop Deck in their original position and orientation. The vents must be square to the Poop Deck. The Poop Deck in the area to be welded is to be dressed to smooth bare metal free of paint and primer. The welds must be all round, continuous fillet welds.

16.4.4.4 The Contractor must install a GFM supply fan on port side, inside a casing. The fan will be bolted through the deck in line with the actual natural ventilation duct. The electrical cable coming from the steering gear compartment must passes through the poop deck inside the fan casing via a non-corrosive, steel watertight gland. A thick soft gasket must be glued to the upper flange of the fan to ensure an airtight junction with the fan casing cover. The gasket material must be closed-cell neoprene or similar.

16.4.4.5 The Contractor must install a GFM exhaust fan on starboard side, inside a casing. The fan will be bolted through the deck in line with the actual natural ventilation duct. The electrical cable coming from the steering gear compartment must pass through the poop deck inside the fan casing via a non-corrosive, steel watertight gland. A thick soft gasket will be glued to the upper flange of the fan to ensure an airtight junction with the fan casing cover. The gasket material must be closed-cell neoprene or similar.

16.4.5 Cable Transit Installation

16.4.5.1 The Contractor must drill a hole into the Poop Deck for installation of a cable standpipe. The standpipe must be close to the vent and the location approved by the Chief Engineer prior to making the hole. The size of the hole must be large enough to accommodate a 1”, schedule 40 steel pipe.

16.4.5.2 The location of underdeck support structure must be taken into account when laying out the hole.

16.4.5.3 The Contractor must prepare the deck in the area of the standpipe and remove all paint, rust and primer down to bare steel.

16.4.5.4 The Contractor must weld a cable standpipe of 1” sch. 40 steel pipe, to the Poop Deck with continuous, all round fillet weld. The steel pipe must be welded top and bottom. The finished height of the standpipe must be 12 inches off the Poop deck.

16.4.5.5 The cable standpipe must be terminated at its upper end by a cable gland threaded into the end of the pipe. The cable gland must be suitable sized for the cable passing through it to provide a watertight seal.

16.4.6 Control Panel Installation

16.4.6.1 The Contractor must mount the new control panel (GFM) in the open space on the port side of the forward bulkhead of the Steering Gear Compartment at Frame 5. The exact location must be confirmed with the Chief Engineer. The Contractor must be responsible for all steelwork required in order to properly support and mount the panel. Welding directly on the bulkhead plating is prohibited.

16.4.7 Control Panel Wiring

16.4.7.1 The Contractor must ensure the wiring is performed by a certified marine electrician.

16.4.7.2 The power for the new fans must be derived from a spare breaker in Panel NP-5 mounted on the forward bulkhead of the Steering Gear Compartment.

16.4.7.3 The Contractor must be responsible for supplying and installing all new cables from NP-5 to the control panel and to both fan motors, CO2 pressure operated switch and remote stop pushbuttons and completing all wiring circuits. All cable must be fitted with suitable stress relief where it exits enclosures.

16.4.8 Remote Stops and CO2 System Wiring

16.4.8.1 The cable transiting the steel bulkhead to power the remote stop buttons must pass through the Roxtec cable transit atop the Steering Gear Compartment entrance. Module blocks must be GFM. The cable must not be exposed on the Accommodations side of the bulkhead and must pass down the back of the bulkhead system.

16.4.8.2 The Contractor must supply and install a junction box and remote stop pushbutton adjacent to the CO2 system pull to house the remote pushbutton and wiring.

16.4.8.3 The Contractor must tie the spare contact in the existing CO2 pressure operated switch into the control wiring such that both fans will shut down in the event the CO2 fire suppression system is activated.

16.4.9 Coatings

16.4.9.1 The Contractor must apply two coats of marine primer to all disturbed and new metal.

16.4.9.2 The Contractor must apply two coats of marine enamel deck red to all primed areas.

16.5 Inspections, Tests and Trials

16.5.1.1 All tests and inspections must be in the presence of the Technical Authority and the TCMS Surveyor

16.5.1.2 The Contractor must submit the new fans, topside wiring, cable standpipes and new topside welds to a hose test to demonstrate absolute watertight integrity. All leaks must be corrected by the Contractor at his expense.

16.5.1.3 The Contractor must test the operation of the new equipment. All controls and shutdowns including fire dampers, stop buttons and pressure operated switch must be demonstrated and operational.

16.5.1.4 Where cables pass through the Steering Gear Compartment bulkhead, the transit must be inspected visually and defects corrected as required by the authorities.

16.6 Documentation

16.6.1.1 The Contactor must submit certificates for all tradespeople performing the work.
16.6.1.2 The Contractor must submit a weld schedule for the connection of the vent to the Poop Deck prior to commencing the work.
16.6.1.3 The Contractor must submit certificates for all new material supplied.

17.0 GALLEY UPGRADE

17.1 Identification

17.1.1 The Griffon galley was installed in the vessel's 1994 Vessel Life Extension (VLE) refit – we want to upgrade some components at this time.

17.1.2 Note the galley space includes the galley proper, the refrigeration space inboard, and the aft exit passageway.

17.2 References

Drawings:

Drawing No.	Drawing Title.	Electronic File No.
C16-09-084-02 Rev1	Galley Temporary Opening	C16-09-084-02 Rev1 task 2.pdf
732600-2016LT	CCGS Griffon Galley Upgrade 2016 - Lighting	Griffon Galley Upgrade 2016 – Lighting.dwg
732400 sht 1 & 2	CCGS Griffon Deck Coverings	732400-1.dwg 732400-2.dwg
CNG05-246-MI SH 3 of 3	CCGS Griffon Fire Control Plan, SH 3 of 3	G05246-3.dwg
732631	CCGS Griffon Galley Seats	732631.dwg
732600	CCGS Griffon Galley Arrangement	732600.dwg
G05 - GAL-1	CCGS Griffon Galley Upgrade 2016 Combi Oven Area	G05GAL-1.pdf
G05 - GAL-2	CCGS Griffon Galley Upgrade 2016 Steam Table	G05GAL-1.pdf

Documents:

- Griffon Galley Upgrade Equipment.pdf
- Dex-O-Tex Documentation
- Griffon Galley Upgrade Ceiling System Documentation (JoinLock Linear Ceiling System Installation.pdf)

17.3 Technical

17.3.1 Removal Route

17.3.1.1 The contractor must follow the approved removal route plan supplied in the reference documentation. Any changes to this removal route are to be approved by the Technical Authority and TC

17.3.2 Removals

17.3.2.1 The Contractor must remove the galley ceiling panels – these will be renewed.

17.3.2.2 The Contractor is responsible to ensure that all interference items are safely isolated before removal. This includes, but is not limited to, fire detection, sprinkler system, electrical, ventilation, and potable water systems in the area affected.

17.3.2.3 The contractor must isolate and remove all interference items associated with the ceiling panel removal. This is to include: air diffusers, lighting, sprinkler heads, fire detection, speakers, and re-heat access hatches.

17.3.2.4 The Contractor must remove the cabinetry and dishwasher against the outboard bulkhead to allow access to the removal route.

17.3.2.5 The contractor must remove the stainless steel Isolamin panels in way of the removal route – these panels will be renewed. The contractor is responsible for removal of all ceiling grounds and trim to remove the Isolamin panels.

17.3.2.6 The contractor must remove the side shell insulation in way of the removal route – this is to be disposed of.

17.3.2.7 The contractor must remove the following items from the vessel – galley range, deep fryer, drawer unit next to deep fryer, upright reach in freezer, upright reach in refrigerator, steamers and shelving unit, convection oven and bread proofer, dishwasher, garburator, and under-counter refrigerator unit. The contractor is responsible for all electrical and plumbing termination to remove these items.

17.3.2.8 The contractor must remove all the ceramic tile flooring in the galley and dispose of this – this is to include all coping tile.

17.3.2.9 The contractor must gouge out any loose cement underlay in the galley space. For bid purposes the contractor to quote on 400 square feet to a depth of 2 inches.

17.3.2.10 The contractor must clean all areas under appliances removed. All debris, grease, and loose insulation are to be removed.

17.3.3 Installation - Flooring

17.3.3.1 The contractor must install a Dexotex floor system in the galley.

17.3.3.2 The Contractor must supply personnel qualified, skilled and experienced in the installation of Dexotex.

17.3.3.3 The Contractor must adhere to all manufacturers' specifications and recommendations regarding deck preparation and installation of all flooring products to achieve the required fire ratings of the deck and insulation values of the bulkhead. Special attention must be given to the existing cement deck preparation prior to the application of the new deck covering.

17.3.3.4 The Contractor must supply and install the following recommended flooring product to the galley:

- Floor Material: DEX-O-TEX _A-70 Latex concrete to build up the deck.
- Floor Coating Material: DEX-O-TEX Colorflake "M" (Colour as per slide DFS-10)
- Floor Sealing Product: DEX-O-TEX Clearsealer

17.3.3.5 For the main deck galley floor, the final floor coating must be applied in such a manner as to have an A-60 fire rating thickness, generous radii in all corners and coves extending up the combing to align with the Isolamin panels.

17.3.3.6 Where the Dexotex coving meets Isolamin bulkheads or plinth combings, the joint must be neat, clean and sealed to the bulkhead or combing once installed.

17.3.3.7 The Contractor must ensure the final result is a completely sealed and continuous deck and bulkhead impervious to moisture.

17.3.4 Installation- Appliances

17.3.4.1 The Contractor must note the new reach-in freezer and fridge are 6 inches deeper than the existing units and are fitted with top-mounted condensing units. Modifications to the position of fixtures such as smoke detection, sprinkler heads, lighting, electrical source, etc. may be required prior to fitting of the units in place. The Contractor must identify all required modifications to the Chief Engineer for approval prior to commencing work. All modifications must be by 1379 action after consultation with the Chief Engineer.

17.3.4.2 The contractor must install the new reach-in freezer in the refrigeration space inboard. The freezer is GFM and will fit in the space vacated by the old unit. Contractor must secure the unit to the plinth in the space. Contractor must connect the power supply of the freezer.

17.3.4.3 The contractor must install the new reach-in refrigerator in the refrigeration space inboard. The refrigerator is GFM and will fit in the space vacated by the old unit. Contractor must secure the unit to the plinth in the space. Contractor must connect the power supply of the refrigerator.

17.3.4.4 The contractor must install the new GFM galley range and deep fryer in the same location as the old units. Contractor must secure the range and fryer to the plinth. Contractor must connect the power supply of the range and fryer.

17.3.4.5 The contractor must re-install the drawer unit next to the fryer and secure it to the plinth.

17.3.4.6 The contractor must install the new GFM under-counter refrigerator unit in way of the unit removed. The contractor must build up the sill of the plinth with steel to ensure the upper counter of the new unit is flush with the inboard counter surface. All material contractor supply. The contractor to secure the new under-counter unit to the plinth and bulkhead and hook up the electrical power. The Contractor must note the new under-counter fridge is 1 inch longer than the existing unit. The Contractor must modify the door holdback in this location to allow the unit to fit while the door is held open.

17.3.4.7 The contractor must install the new GFM dishwasher in the same location as the old unit. Contractor must secure the dishwasher in place. Contractor must connect the power supplies (dishwasher and booster heater), water supplies, and drains to dishwasher. The contractor must re-mount and connect the dishwasher auto-dispensing system and also re-install the vent hood.

17.3.4.8 The contractor must modify the existing steam table to accept three new square electric wells as well as two round wells – all GFM. The contractor is to remove the four fitted wells and modify the stainless steel surface to accept the new components. The contractor must electrically connect the new components to the existing circuit – all junction boxes and components required will be contractor supplied.

17.3.4.9 Convection oven area is to be modified and repaired. The convection and proofer ovens will be replaced by a single Combi Oven. One steamer to be removed and one re-installed. New GFM cabinets installed. Work as follows:

- The contractor must refer to the reference drawing in regard to this item.
- The contractor must increase the plinth size as shown on the diagram. This plinth will be supported by the existing plinth – i.e. it will not extend completely down to the main steel deck. The contractor is to consult with the Dexotex flooring contractor as to the plinth design to ensure the new plinth works well with the Dexotex.
- The new plinth will be covered with a new ¼" thick 304 stainless steel plate to form a surface to mount the appliances. This plate is to be 48" wide x 69" long and secured to the plate with stainless steel countersunk fasteners.
- Where piping and power cables penetrate the surface plate the contractor must install welded stainless steel pipe standoffs and glands to suit.
- The contractor must install the new GFM Combi-Oven, hood, and support cabinet in the location shown on the reference drawing. Contractor must secure the components to the surface plate and connect the oven power supply, water feed, and water drains to the unit as per the installation manuals. Note the old convection oven feed is to be used for the Combi oven and the old proofer feed to be used for the vent hood.
- Contractor must mount the new GFM water filtration system at a suitable location on the surface plate – mounting materials contractor supply. Contractor must consult with the TA as to location and mounting design prior to fabrication and installation.
- The contractor must install and secure the new GFM steamer cabinet and stand on the surface plate.
- The contractor must re-install one of the steamers removed on top of the steamer cabinet – location to be determined by the TA. The steamer power supply, water feed, and drain lines are to be connected by the contractor.

17.3.5 Installation – Galley Ceiling

17.3.5.1 The galley ceiling system is a BIP system and it is to be replaced. The new ceiling will be Joiner Systems Monoblock system and it is very similar dimensionally to the fitted system. It is hoped that much of the grounding system can be re-used.

17.3.5.2 The Contractor must replace all exposed ceiling system components including all ceiling panels and trim profiles. All ceiling components are GFM.

17.3.5.3 The contractor must install new the air diffusers in the ceiling – these will be GFM.

17.3.5.4 The contractor must install a new access hatch for the galley re-heater located in the galley. This hatch is GFM.

17.3.5.5 The contractor must renew any grounds as required to install the new ceiling. These grounds will be GFM.

17.3.5.6 All extra ceiling panels, trim profiles, and grounding profiles will be returned to the Coast Guard at the end of the contract.

17.3.6 Galley Lighting

17.3.6.1 The contractor must renew all the galley lighting with GFM fixtures. The new fixtures are LED surface mount type.

17.3.6.2 The lights are to be installed as per the referenced lighting plan. Contractor to note that there are more new fixtures than removed. Contractor to supply approved cable and junction boxes to install the extra fixtures.

17.3.7 Removal Route Repair

17.3.7.1 The contractor must follow the approved removal route plan when repairing the removal route.
17.3.7.2 Contractor must renew all insulation removed from the ship's side.
17.3.7.3 The contractor must replace the stainless steel Isolamin galley panels in way of the removal route with new panels and joining strips – these are GFM.

17.4 Tests and Trials

17.4.1 The Contractor must hose test the side shell plating as per the approved removal route drawings in the presence of TCMS.
17.4.2 The contractor must perform NDT testing of the removal route repair welds ad per the repair plan.
17.4.3 All appliances must be demonstrated functional to the Technical Authority.

17.5 Documentation

17.5.1 The Contractor must provide copies of all NDT testing results to the TA.

18.0 SEA WATER PIPING SYSTEMS UPGRADE

18.1 Scope

18.1.1 The Contractor must remove, dispose of, and replace the main engine sea water cooling piping as specified.

18.1.2 The Contractor must supply, install and commission the new piping and all other associated components to provide a fully functional and operational engine cooling water system.

18.2 References

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

Drawings:

Drawing Number	Description	Electronic File No.
664-4207-1	Raw Water Circulating Diagram	664-4207-1.pdf
664-4207-10 SH 1	Raw and Fresh Water Circulating Piping Arrangement	664-4207-10 SH1.pdf
664-4207-10 SH 2	Raw and Fresh Water Circulating Piping Arrangement	664-4207-10 SH2.pdf
G052016SW-1	CCGS Griffon – Main Engine Sea Water Piping Replacement	G052016SW-1.dwg
G052016SW-2	CCGS Griffon – Propulsion Sea Water Piping Replacement	G052016SW-2.dwg
G052016SW-3	CCGS Griffon – Emergency Cooling Piping Replacement	G052016SW-3.dwg
G052016SW-4	CCGS Griffon – Emergency Cooling Piping Replacement Details	G052016SW-4.dwg

Documents:

- C.S.A., Hull Construction Regulations, Marine Machinery Regulations
- Sea Water Piping Details #1 Main Engine (Griffon Refit 2016 ME#1 SW Piping.pdf)
- Sea Water Piping Details #2 Main Engine (Griffon Refit 2016 ME#2 SW Piping.pdf)
- Sea Water Piping Details #3 Main Engine (Griffon Refit 2016 ME#3 SW Piping.pdf)
- Sea Water Piping Details #4 Main Engine (Griffon Refit 2016 ME#4 SW Piping.pdf)
- Griffon Main Engine Sea Water Valve List (Griffon ME Sea Water Valves.pdf)
- Griffon Sea Water Piping Details #1 (Griffon Refit 2016 Propulsion SW Piping-1.pdf)

- Griffon Sea Water Piping Details #2 (Griffon Refit 2016 Propulsion SW Piping-2.pdf)
- Griffon Sea Water Piping Details #3 (Griffon Refit 2016 Propulsion SW Piping-3.pdf)
- Griffon Propulsion Sea Water Valve List (Griffon Propulsion Sea Water Valves.pdf)
- Griffon Propulsion Sea Water Sight Glass List (Griffon Propulsion Sea Water Sight Glasses.pdf)
- Griffon Emergency Cooling Piping Modifications (Griffon Refit 2016 Emergency SW Piping.pdf)

18.3 Scope of Work – General

18.3.1 All material removed becomes property of the Contractor and is to be disposed of in accordance with Federal, Provincial and Municipal regulations and copies of disposal certificates provided to the Inspection Authority.

18.3.2 The Contractor must decommission the main engine sea water cooling systems onboard the vessel for the duration of the work period of this Specification. Each sea water systems must be isolated with a lockout system to prevent ingress of any contaminants including water into the piping system while the work of this Section of the specification is carried out.

18.3.3 The Contractor must dispose of all water removed from the system in accordance with all Federal, Provincial and Municipal regulations and copies of disposal certificates provided to the Inspection Authority.

18.4 Scope of Work – Interference Items

18.4.1 The contractor must note that the interference items involved with this job are significant.

18.4.2 The contractor must note interference items include:

- Other system piping including fuel systems, jacket water, bilge and ballast, waste oil, lube oil, steam, and condensate – pretty much every system on board.
- Structural items such as deckplate supports, engine and other machinery seats, wire trays.
- Machinery components such as heat exchangers, pumps, and strainers.

18.4.3 The contractor is responsible for removal and replacement of any interference items associated with the sea water piping repair.

18.4.4 The contractor is responsible for cleanup, removal, and proper disposal of any fluids – water, oil, fuel – that enters the bilge as a result of disturbing interference piping.

18.4.5 The contractor must supply all new fasteners and gaskets for any interference items disturbed in this work.

18.4.6 In order to assist with the identification of interference items, the Coast Guard has supplied reference documents detailing the pipes to be renewed and the interference items involved. The contractor must note the reference documents are meant as a guide only and must not to be considered 100% accurate.

18.5 Main Engine Sea Water Cooling System

18.5.1 The Contractor must disconnect and remove all main engine cooling water piping from the sea bay isolation valve to the flanges on the main engine SW pumps to the point where the sea water enters the main 10 inch return header. (The return header will not be renewed at this time).

18.5.2 The contractor must remove all sea water piping from the engine pump discharge line, to the propulsion generator cooler, and then to the main overboard header.

18.5.3 The Contractor must renew all pipe sections removed. The pipes are to be duplicated including all vent connections, thermowell pockets, drains, etc.

18.5.4 The contractor must remove the four main engine suction strainers. These are to be cleaned and descaled, the sealing face on the body and bonnet machined true, and re-installed. Contractor to quote on 40 machining hours to overhaul the strainers.

18.5.5 All valves in the system are to be clearly labelled, fully overhauled, and re-installed. Contractor to quote on 80 machining hours to overhaul the valves. See reference list of valves to be overhauled.

18.5.6 The contractor is to note that the main engine pump suction and discharge flanges are not standard. The contractor is to machine new flanges to suit.

18.6 Sea Water Emergency Cooling Cross Over Piping

18.6.1 The contractor must note that the emergency sea water to fresh water cross connect (spectacle flange) piping must be removed at this time. Please note the reference document is just a guide and not 100% accurate.

18.6.2 This emergency sea water connection to the engine fresh water cooling system at the engine is used for the pre-heat system of the engine jacket water and this piping is to be modified.

18.6.3 On each engine, the contractor must remove the piping from the engine to this emergency sea water connection – referenced as FW-2, FW-3, FW-4, and FW-5. Griffon ER staff will assist with draining the cooling system of the engines.

18.6.4 On each engine, the contractor must fabricate new piping from the starboard side exhaust manifold fresh water cooling connection to the first flange of the warm up piping which was disconnected – this piping will be 2”. This piping will include a custom fabricated flange to the engine which will be contractor supply. The contractor is to incorporate a new flex line in the piping close to the engine connection – this flex will be GFM.

18.6.5 This piping is to be pressure tested before installation as per the fabrication details but not galvanized.

18.6.6 The contractor must remove the referenced pipes FW-1 and FW-6 from the cooling system. These pipes are to be discarded. The contractor must also remove the four 5” emergency cooling overboard valves attached to FW-1 and FW-6 – these valves are to be handed to the Coast Guard for retention.

18.6.7 The contractor must blank the 5” fresh water cooling flanges at the removed valves with new contractor supplied steel 150# rated blank flanges, gaskets, and fasteners.

18.6.8 The contractor must blank the 8” sea water header flanges at the removed pipes with new contractor supplied galvanized steel 150# rated blank flanges, gaskets, and fasteners.

18.7 Propulsion Motor Cooling Water Piping

18.7.1 The Contractor must disconnect and remove all propulsion motor cooling water piping from the sea bay isolation valve to the first flanges on the cooling water pumps.

18.7.2 The Contractor must disconnect and remove all propulsion motor cooling water piping from the pump discharge flanges to the propulsion generator coolers, bearings, and finally the shaft bearings.

18.7.3 The Contractor must renew all pipe sections removed.

18.7.4 The contractor must note that the pipe from the propulsion sea strainer to the propulsion motor cooling water pumps has been cut and fitted with a Straub pipe coupling as the pipe was cut at some point in the past. This coupling is not to be re-installed – the pipe is to be replaced as a single piece as originally fitted.

18.7.5 The contractor must remove the cooling water pump suction strainer. This strainer is to be cleaned and descaled, the sealing face on the body and bonnet machined true, and re-installed. Contractor to quote on 10 machining hours to overhaul the strainer.

18.7.6 All valves in the system are to be clearly labelled, fully overhauled, and re-installed. Contractor to quote on 40 machining hours to overhaul the valves.

18.7.7 All sight glasses in the system are to be clearly labelled, fully overhauled, and re-installed. Contractor to quote on 20 machining hours to overhaul the sight glasses.

18.8 Piping Fabrication Details

18.8.1 The contractor to note that there are three bulkhead penetrations for this piping. In order to maintain corrosion protection the contractor is to utilize the same technique as fitted – spool pieces fitted with doubler plates galvanized before installation.

18.8.2 Contractor to note that many component flanges in the system (pumps, coolers, and valves) are of soft metal construction (e.g. bronze or brass). Raised face flanges are not to be used when mating with these flanges.

18.8.3 The components supplied for the engine cooling water system upgrade must meet the following approvals:

- Lloyds Register of Shipping Quality Assurance;
- Transport Canada Marine Safety;
- Canada Shipping Act, Marine Machinery Regulations.

18.8.4 The contractor is to renew all piping using similar fittings as the pipe removed.

18.8.5 After fabrication but before galvanizing, all piping is to be pressure tested to 100 psi. The pressure test to be witnessed by the TI and TCMS.

18.8.6 All piping is to be hot dip galvanized before installation.

18.8.7 Although the intent is to replace all piping with hot dip galvanized piping similar to the as-fitted piping, substitute piping techniques may be approved by the Coast Guard if the substitution requested by the contractor is reasonable, cost effective, and approved by TCMS. Each request for an alternative piping method will be evaluated individually by the Coast Guard.

18.9 Materials

18.9.1 All pipe must be seamless steel pipe, material ANSI/ASTM A 53 GR A or B schedule 40.

18.9.2 All valves which require replacement due to condition will be the same material and trim as the fitted valve. Replacement will be handled through 1379 action.
18.9.3 All butt weld fittings must conform to ANSI.ASTM A234-WPB.
18.9.4 All socket weld fittings, welding bosses, and threaded fittings must conform to ANSI/ASTM A 105.
18.9.5 All tube fittings to be brass 45 degree flare type.
18.9.6 All weld neck, extended weld neck, socket, or slip on flanges to ANSI/ASTM A181-GR1.
18.9.7 All gasket material to be the proper thickness and be Garlock 3000 Blue or equivalent. Gasket material subject to approval by the Technical Authority.
18.9.8 All hex bolts and nuts to be ASTM A307-A zinc plated.
18.9.9 All bolt threads are to be coated with anti-seize compound prior to assembly.

18.10 Testing and Commissioning

18.10.1 The Contractor must schedule and conduct the commissioning tests and dock trials of the sea water cooling water systems after final inspection.
18.10.2 The Contractor must schedule and conduct the commissioning tests and dock trials of any other system disturbed due to work on the sea water piping after final inspection.
18.10.3 The Contractor must develop specific procedural tests for the dock trials of the sea water cooling water systems to ensure that the system is fully functional and leak free.
18.10.4 The Inspection Authority must witness all commissioning and dock trials of the retrofitted engine cooling water system.
18.10.5 The Contractor must ensure that the final installation is TCMS approved and inspected as such.
18.10.6 Defects and Re-Testing - any part of the sea water cooling systems or other systems that prove to be defective during any part of the tests must be replaced or repaired to produce a fully operational and functional system. Such occurrences may render the tests void or require further testing to be carried out to the satisfaction of the Inspection Authority.

18.11 Documentation

18.11.1 The contractor must provide documentation to show all materials meet the requirements outlined in the Materials section.
18.11.2 The Contractor must supply pipe pressure test records.
18.11.3 The contractor must supply galvanizing reports.

19.0 INSTALLATION OF FORWARD SEARCHLIGHTS

19.1 Identification

19.1.1 The Coast Guard has purchased two Norselight XS 3000 R60 Xenon searchlights which are to be installed on the forward A-frame of the Griffon.

19.1.2 The searchlight components are to be installed by the contractor, the components connected electrically, and the lights commissioned.

19.1.3 The contractor must install new access ladders and platforms on the A frame to access these lights.

19.2 References

19.2.1 Drawings:

Drawing No.	Drawing Title.	Electronic File No.
G05-E-R60-XS3000-000 Rev 2	Griffon Fwd Searchlight System Layout	G05ER60XS3000 Rev 2.pdf
C16-09-187-01	Searchlight Mount	C16-09-187-01 Rev1 Task 5 .pdf
G05 Console1	CCGS Griffon Refit 2016 Port Center WH Console	Griffon Port Center WH Console.dwg

19.2.2 Manuals: Norselight Installation & User Manual (Manual_Xenon_R60_7SL6002001.pdf)

19.3 Technical

19.3.1 Removals

19.3.1.1 None as this is a new installation.

19.3.2 Installation of the Searchlight Components

19.3.2.1 The Contractor must provide all material, equipment, tooling (including cranage) and parts required to do the work.

19.3.2.2 The Contractor must supply all materials to fabricate the searchlight mounting platforms as per the reference drawings.

19.3.2.3 The Contractor must install the searchlight mounts on the A-frame as well as the searchlights.

19.3.2.4 The contractor must supply all materials to fabricate and install the ladders and maintenance platforms shown on the reference drawings.

19.3.2.5 The contractor must supply and install new cableways for the installation of the searchlights as shown on the reference drawings.

19.3.2.6 The contractor must install the new Xenon power supplies in the lower hydraulics room of the foc'sle. The contractor must supply structural steel to extend the mounting

frames on the forward bulkhead of this space. The two power supplies must be mounted starboard of the crane HPU starter.

19.3.3 The contractor must supply and install approved cables to electrically connect the power supplies and searchlights together using the manufacturer's recommended cable sizes.

19.3.4 The Contractor must supply and install new power feed cables to the searchlights and power supplies. Power for the two forward searchlights and two power supplies will be fed from the forward 240 VAC distribution panel in the focsle upper bosun's stores compartment. The contractor must supply new circuit breakers as required to supply power to the lights and power supplies. Contractor to note there are four spare 15 amp breakers fitted which can be used if sufficient.

19.3.5 The contractor must supply and install cabling to interconnect the two power supplies and two searchlights for remote On/Off capability as per guidance drawings provided.

19.3.6 Two LAN cables to the wheelhouse were previously installed for the searchlight LAN system – this is to be connected to the searchlight LAN bus of each searchlight.

19.3.7 In order to fit the new searchlight controls in the wheelhouse the port center console is to be re-configured. The contractor must install two GFM Saco mimic panels in the port center console. The components fitted in the console are to be relocated to the Saco mimics as shown on the reference drawing.

Components to be relocated include:

- Phone and handset
- VHF Radio
- Rudder angle Indicator and dimmer
- Window heater control and fuse
- Morse light (note new switch)
- WH and Accommodation fan stop (note new switch)
- General Alarm switch (note new switch)
- Whistle switch. (note new switch)

New Components to be added include:

- Port and Starboard Searchlight Controllers
- S-band and X-Band radar heater switches.

19.3.8 The Contractor must install all associated electrical components of the searchlight system (DC Power supplies, PLCs, Lan hubs, etc.) under the center port WH forward console.

19.3.9 The contractor must install slave control modules in the wing console – port searchlight slave on port wing console, starboard slave on starboard wing.

19.3.10 The contractor must interconnect all electrical components using contractor supplied approved cabling between components. Contractor must run all cabling in the deckhead space below the wheelhouse. The contractor is responsible for removal and re-installation of any deckhead panels and interference items (lights, speakers, vents, etc.) in

order to run the cabling. Contractor is responsible for all transits required for this project – either the installation of new transits or the opening and re-packing of existing transits.

19.3.11 All new steel structures must be painted with the vessel's paint code:

- Searchlight and A-Frame structure paint:
- First coat: Interprime Red CPA 234 Red
- Second coat: Interprime White CPA 235 White
- Third coat: Interlac 665 Buff RAL: Design 070 7040

19.3.12 All electrical wiring and terminals must be properly identified in accordance with the references on the drawings provided by the manufacturer and the vessel's power supply numbers. Cable identifications must be made of non-ferrous metal or heat-resistant plastic. All electrical wiring in the units must be properly attached and supported.

19.4 Tests and Trials

19.4.1 The Contractor must commission the searchlights and demonstrate them fully functional in all modes from all control stations.

19.4.2 Contractor must load test all platforms and fall arrest systems as per MOSH regulations to the satisfaction of the attending TCMS Surveyor.

19.5 Documentation

19.5.1 The Contractor must provide ACad drawings of the as fitted wiring of the new searchlights. The contractor must upgrade the Griffon's EL one line drawing to show the new searchlights. Drawings to be provided in electronic format and must not be password protected.

19.5.2 The contractor must hand over to Coast Guard any manuals and documentation that were supplied with the searchlights.

20.0 INSTALLATION OF RADAR SCANNER HEATERS

20.1 Identification

20.1.1 The Coast Guard has purchased winterization kits for the Sperry radar scanners installed in 2015. These scanners are located on forward A-frame of the Griffon.

20.1.2 The heating components are to be installed by the contractor, the components connected electrically, and the heaters commissioned.

20.2 References

20.2.1 Drawings:

Drawing No.	Drawing Title.	Electronic File No.
	CCGS Griffon radar heater installation drawing	

20.2.2 Manuals: Sperry Winterization Heater Kits Addendum

20.3 Technical

20.3.1 Removals

20.3.1.1 None as this is a new installation.

20.3.2 Installation of the Scanner Heating Components

20.3.2.1 GFM equipment includes: Circuit breaker, control panel, thermostat, and A-Frame junction boxes.

20.3.2.2 The Contractor must provide all other material, equipment, tooling (including the crane) and parts required to do the work.

20.3.2.3 The Contractor must supply all materials to mount the components. The final location of the components to be determined by the Technical Authority.

20.3.2.4 The contractor must supply and install approved cables to electrically connect the components using the cable sizes stated on the reference drawing.

20.3.2.5 The contractor must supply and install an identical control cable from the focsle to the Wheelhouse for the control switches. The control switches are to be located in the center-starboard console.

20.3.2.6 All new steel mounting brackets will be painted using the ship's paint code:

- A-Frame structure paint:
- First coat: Interprime Red CPA 234 Red
- Second coat: Interprime White CPA 235 White
- Third coat: Interlac 665 Buff RAL: Design 070 7040

20.3.3 All electrical wiring and terminals must be properly identified in accordance with the references on the drawings provided. Cable identifications must be made of non-ferrous metal or heat-resistant plastic. All electrical wiring in the units must be properly attached and supported.

20.4 Tests and Trials

20.4.1 The Contractor must commission the heating system and demonstrate the heaters fully functional.

20.5 Documentation

20.5.1 The contractor must upgrade the Griffon's EL one line drawing to show the new heater circuit. Drawings to be provided in electronic format and must not be password protected.

21.0 MERCURY ASSESSMENT SURVEY

21.1 General

21.1.1 The Coast Guard has a requirement to conduct an assessment of mercury levels on the Griffon every 5 years. The Contractor will bid on an allowance of fifty hours at the daily rate of the Lehder Environmental Services Ltd FSR for the purpose of this Section.

21.1.2 The Contractor must supply the services of Lehder Environmental Services Limited to conduct this assessment.

21.1.3 Contact:

- Lehder Environmental Services
  704 Mara Street, Suite 210
  Sarnia, Ontario
  N7V 1X4
  519-336-4101
  www.lehder.com

21.2 References

Documents: Lehder Mercury assessment dated June 1, 2011, Project 113817 (CCGS Griffon Mercury Assessment – 2011.pdf)

Standards: Canada Labour Code Part II Latest Version

MOSH Regulations – Latest version.

21.3 Technical

21.3.1 In order to complete this specification section all material and labour will be contractor supplied. The Contractor must take all necessary precautions before proceeding with this work.

21.3.2 The contractor must arrange the mercury assessment to coincide with other contractual work to avoid interference.

21.3.3 The contractor must provide 48 hours notice of the testing to the Technical Authority to allow Coast Guard work scheduling changes as required.

21.3.4 The Contractor must monitor mercury vapour levels by collecting air samples in the following areas:

- Machinery Control Room
- Old pneumercator cabinet inside the Machinery Control Room
- Engine Room Workshop
- Steering gear compartment.

21.4 Documentation

21.4.1 The contractor must submit a report that will:

- Summarize the results of the air sampling on board.

- Compare the results to current MOSH and Canada Labour Code Part II regulations.
- Comment on the Griffon's Mercury Abatement Program Site Specific Work Instruction as to content, suitability, and compliance with regulations.
- Present a conclusion.
- Provide recommendations.

21.4.2 The Contractor must provide the TA with a report in pdf electronic format The Contractor must also provide three (3) paper copies of the report on 8.5 by 11 inch paper.

21.4.3 The contractor must supply copies of all laboratory results if not included in the report.

21.4.4 The contractor must provide calibration documents for all test instruments.

22.0 ASBESTOS MATERIAL SURVEY

22.1 General

22.1.1 The Canadian Coast Guard has a requirement to conduct an Asbestos Containing Materials survey and an air quality sampling survey onboard the CCGS Griffon to satisfy the TCMS MOSH requirements. This is done every 5 years.

22.1.2 The Canadian Coast Guard has a requirement to provide in –house Asbestos Awareness training for the engine room staff of both crews.

22.1.3 The Contractor must supply the services of Pinchin Leblanc Environmental Limited to conduct this assessment. The Contractor will bid on an allowance of fifty hours at the daily rate of the Pinchin LeBlanc Environmental Ltd FSR for the purpose of this Section.

22.1.4 The Contractor must take and analyze bulk and air samples testing these for asbestos fiber content and produce a written report with the results and recommendations.

22.1.5 Contact:

- Pinchin LeBlanc Environmental Limited
  42 Dorey Avenue
  Dartmouth, Nova Scotia
  B3B 0B1
  Tel: 902-461-9999
  Fax: 902-461-9932
  Email: info@pinchinleblanc.com

22.2 References

Documents: Pinchin LeBlanc Asbestos Materials Survey (Griffon) dated June 1, 2011, Project 01-02-00497 (CCGS Griffon Asbestos Survey – 2011.pdf)

Standards: Canada Labour Code Part II Latest Version

MOSH Regulations – Latest version.

22.3 Technical - General

22.3.1 In order to complete this specification section all material and labour will be contractor supplied. The Contractor must take all necessary precautions before proceeding with this work.

22.3.2 The contractor must arrange the Asbestos Survey to coincide with other contractual work to avoid interference.

22.3.3 The contractor must provide 48 hours notice of the testing to the Technical Authority to allow Coast Guard work scheduling changes as required.

22.3.4 The contractor must arrange for a representative of Pinchin Leblanc to attend the vessel and provide an Asbestos Awareness Training course to vessel staff.

22.3.5 Technical Task 1 – Asbestos Materials Survey

22.3.5.1 The contractor must perform an Asbestos-Containing Materials Survey that meets or exceeds the following requirements:

- Conduct survey by visually inspecting each area, cabin or space within the ship.
- Collect required samples for analysis in accordance with a Provincial & Federal approved method latest version.
- Where required, an intrusive search must be made, particularly in areas where there is heat such as exhaust and steam piping. Arrangements to do such a search must be made with the Technical Authority.
- Identify each distinct area, cabin or space where observations are made by assigning a Location Number that is unique to the ship being surveyed.
- For each distinct area assigned a Location Number, report on the presence or absence of asbestos containing materials. The report must make reference to the presence or absence of asbestos in components such as:
    - Structural components (i.e. beams, columns, pillars), bulkheads, decks, hanging ceilings, floor tiles.
    - Mechanical equipment including exhaust piping.
    - Piping systems (i.e. steam, hot & cold water, refrigerant and other liquids).
    - Ductwork.
    - Other.

22.3.6 For each Location and components identified above, make observations and record information about both asbestos and non-asbestos materials. As a minimum the record of information must include:

- The type of material or product.
- Friable or non-friable.
- Type of covering if material is located under or behind a protective barrier.
- Present condition.
- Accessibility of the material.
- The amount of material present.
- The results of bulk sample analyses.
- Recommendations for action, both short & long term.

22.3.7 Sampling Methodology Task 1

22.3.7.1 The Contractor must make reference to the ships drawing and survey all accessible areas within the scope the assessment, and inspect for the presence of ACM and the info must be recorded where ACM is present, including quantities, locations, type and condition.

22.3.7.2 The Contractor must collect bulk samples for Asbestos content analysis. The analysis must be done using standard acceptable test methods such that the results can be compared to Federal acceptable limits levels.

22.3.7.3 The Contractor must submit a detailed report that will:

- Summarize the results of the monitoring program.
- Compare results to the limits of exposure prescribed by the Federal and Provincial regulations.

- Present Conclusion.
- Provide recommendations.

22.3.8 Task2 – Air Sampling

22.3.8.1 The Contractor must perform Asbestos air sampling at 9 selected locations. The Contractor to note that before preceding the Technical Authority must be consulted. The locations are:

- Lower Deck: Engine Control Room, Engine Room Workshop.
- Tween Deck: Carpenters Shop.
- Upper Deck: Crews Mess, Galley, Chief Cooks Cabin.
- Poop Deck: Ships Office, Officers Mess.
- Flight & Boat Deck: Chief Officers cabin.

22.3.9 Sampling Methodology Task 2

22.3.9.1 The Contractor must use the latest version of the Asbestos fiber sampling procedure acceptable by the Federal & Provincial regulations and submit a detail report. This report will:

- Summarize the results of the monitoring program.
- Compare results to the limits of exposure prescribed by the MOH&S regulations, made in pursuant to the Canada labor Code Part II, the threshold limit values are 0.1 fiber per cubic centimeter (F I CC) of air.
- Present conclusion.
- Provide recommendations.

22.3.10 Task3 – Training

22.3.10.1 The Contractor must provide Asbestos Awareness Training for the vessel's staff.

22.3.10.2 Asbestos awareness training must include the following topics:

- The properties of asbestos and its effects on health
- The types, uses and likely occurrence of asbestos and ACMs in buildings and plant
- The general procedures to be followed to deal with an emergency
- How to avoid the risks from asbestos.

22.3.10.3 The course must be provided by a certified trainer.

22.3.10.4 Training must take place on board the Griffon.

22.3.10.5 The Griffon has 2 shifts that work on the vessel, month-on, month-off. The contractor must ensure that both shift are provided with the training (minimum 8 persons each shift).

22.3.10.6 The Contractor must coordinate with the TA to determine the scheduling of the training course(s).

22.4 Documentation

22.4.1 The Contractor must provide a report detailing the results for ACM survey, the bulk sampling, and the air quality samples.

22.4.2 The Contractor must provide recommendations and an updated CCG Asbestos Management Plan for the CCGS Griffon.

22.4.3 The Contractor must supply Certificate of Instrument Calibration used in the survey process.

22.4.4 The Contractor must provide the TA with the reports in pdf electronic format The Contractor must also provide three (3) paper copies of the report on 8.5 by 11 inch paper.

22.4.5 The contractor must supply each person that completes the training course with a certificate to indicate this.

23.0 SUPPLY AND INSTALL NEW SHOREPOWER BOX

23.1 Identification

23.1.1 The Coast Guard has a requirement to replace the shorepower changeover/connection box on the Griffon.

23.1.2 All machinery, equipment, and materials for this specification item must be contractor supplied.

23.1.3 As the vessel will be on shorepower the duration of the refit period the Contractor must arrange for this installation to be done so as to minimize conflict with other work. i.e the rebuilding of the ship service generator fuel injection pumps.

23.2 References

Drawings:

Drawing No.	Drawing Title.	Electronic File No.
766401 Rev A10	Updated Electrical One Line Diagram CCGS Griffon	766401 A10 2016.dwg

Documents – TP 127E – Latest Version

23.3 Technical

23.3.1 Removals

23.3.1.1 The Technical Authority must assist with powering the Griffon from a SSG while the shorepower is worked on.

23.3.1.2 The Contractor must disconnect the shorepower cable from the shorepower box – this will be re-used. The contractor must remove and dispose of the existing shorepower box. Contractor to note that the intent is to re-use the feed and outlet cables to this box so care is to be taken not to damage these cables.

23.3.2 Installation - Physical

23.3.2.1 The new installations must meet all the requirements of TP127E.

23.3.2.2 The new shorepower box will be mounted in the same location as the fitted box. Contractor must note that the fitted box is mounted on aluminum angles welded to an aluminum bulkhead.

23.3.2.3 The contractor must install a new shorepower box with the following characteristics:

- Enclosure to be stainless steel material NEMA 4X rated with side hinged door.
- Enclosure to be lockable.

23.3.2.4 The enclosure to house all electrical components required for the installation.

23.3.2.5 The Coast Guard wishes to go to a plug type connection on the shorepower box rather than the present hardwire connection. The Contractor must supply and install a new shorepower receptacle on the box to match the standard plugs/receptacles we already use. Details of the plug/receptacle:

- Emmerson/Appleton Powertite, 400 Amp Pin and Sleeve type.
- Plugs Part Number AP40034E
- 3 phase, four wire.

23.3.2.6 The contractor must supply and install two new plugs on the Griffon's shorepower cable.

23.3.2.7 The new shorepower box will be clearly identified with an engraved Lamacoid label.

23.3.3 Installation - Electrical

23.3.3.1 The intent is to replace the existing installation with modern components. The exception is that the original installation had a 240 VAC feed breaker – this is not required.

23.3.3.2 The Contractor is to verify the fitted breaker ratings are correct for the installation. The contractor must supply and install two new moulded case circuit breakers – one to feed the step down transformer and one to feed the 460 switchboard feed directly.

23.3.3.3 The two breakers are to be mechanically interlocked so they cannot both be closed at the same time.

23.3.3.4 The contractor is responsible for connecting the new circuit breakers to the appropriate electrical circuits.

23.3.3.5 The breakers will be clearly identified with engraved Lamacoid labels stating the breaker name, identification number, and trip setting.

23.3.4 Spares

23.3.4.1 The contractor must supply loose one complete shorepower plug assembly PN AP40034E.

23.3.4.2 The contractor must supply loose one complete shorepower receptacle assembly with Mounting box PN AJA40034-400. (This may be required at contractor's facilities in the future).

23.3.4.3 The contractor must supply one complete spare circuit breaker identical to the 600 volt feed breaker.

23.4 Inspection, Testing, Trials

23.4.1 The new installation will be presented to TCMS for approval after completion.

23.5 Documentation

23.5.1 The Contractor must provide ACad drawings of the as fitted wiring of the new shorepower system and upgrade the vessel's EL One Line Drawing. Drawings to be provided in electronic format and must not be password protected.

23.5.2 The contractor must hand over to Coast Guard any manuals and documentation that were supplied with the upgrade components.

24.0 BREAKER COORDINATION AND ARC FLASH HAZARD ANALYSIS STUDIES

24.1 General

24.1.1 The Canadian Coast Guard has a requirement to conduct a circuit breaker co-ordination study on the CCGS Griffon. The Griffon's electrical distribution system has been heavily modified over the 46 years of the vessel's life. In addition, a number of circuit breakers were modernized in 2015.

24.1.2 The Coast Guard also requires an Arc Flash Hazard analysis study of the electrical distribution system and electrical propulsion system.

24.1.3 The Contractor must supply the services of a licensed electrical engineering firm to conduct these studies.

24.2 References

24.2.1 Drawings: Griffon Electrical One Line Drawing

24.2.2 Documents: Griffon Megger Test Report 2015

24.2.3 Standards: TP 127E
CSA-Z462-12, Latest Edition, Workplace Electrical Safety.
CAN/CSA-Z431 Latest Edition, Basic Safety Procedures for Man-Machine Interface – Marking and Identification
CAN/CSA-Z321Latest Edition – Signs and Symbols for the Workplace.
ANSI Z535.4 Latest Edition – Safety Labels

24.3 Technical - General

24.3.1 In order to complete this specification section all material and labour will be contractor supplied. The Contractor must take all necessary precautions before proceeding with this work.

24.3.2 The contractor must arrange the studies to coincide with other contractual work to avoid interference.

24.3.3 The contractor must provide 48 hours notice of any electrical testing required to the Technical Authority to allow Coast Guard work scheduling changes as required.

24.3.4 Technical Task 1 – Breaker Coordination Study

24.3.4.1 The contractor must perform a Circuit Breaker Co-ordination study for the ship's electrical distribution system.

24.3.4.2 The study will be all protection devices from the power source (generator or shorepower) to the distribution panel level, and include any significant motor circuit (i.e. over 2 HP).

24.3.4.3 The study will include a short-circuit analysis which will include:

- Data Collection – the contractor must obtain information on all relevant components of the distribution system. The Technical Authority can assist with this as far a drawings and documentation.
- One-Line Diagram – the contractor must prepare a power system diagram detailing component connections.
- Computer Analysis – the contractor must use an industry standard computer program to perform the short circuit analysis using the system data obtained.

24.3.4.4 The Breaker Co-ordination Study must include:

- Incorporation of the short circuit analysis.
- Expansion of the data already collected to include all fitted protective devices and their characteristics – trip curves, manufacturer's settings, etc.
- Computer Analysis – the contractor must use an industry standard computer program to determine the optimal settings of the various protective devices to provide the best protection for the ship's electrical distribution system.
- The contractor must develop time-current curves for the distribution system to clearly indicate breaker co-ordination.

24.3.5 Task 1 – Deliverables

24.3.5.1 The contractor must supply the following as deliverables for the breaker co-ordination study:

- Results of the short circuit analysis.
- Results of the breaker co-ordination study.
- Recommendations as to changes to the circuit protection devices to improve electrical protection of the ship's distribution equipment.

24.3.6 Technical Task 2 – Arc Flash Hazard Analysis Study

24.3.6.1 The Contractor must perform an Arc Flash Hazard Analysis of the Griffon's electrical distribution system and main electrical propulsion system.

24.3.6.2 The arc flash hazard analysis must meet all the requirements of CSA Z462-12, latest version.

24.3.7 Task 2 – Deliverables

24.3.7.1 The contractor must supply the following as deliverables for the arc flash hazard analysis:

- Results of the arc flash analysis including: boundary calculations, incident energy at the working distance calculations.
- Personal Protective Equipment requirements for personnel working on electrical equipment on board.
- All electrical equipment such as switchboards, panelboards, industrial control panels, electrical enclosures such as MCC's that require access for maintenance or testing purposes must be labelled according to the latest version of standard CSA Z462-12, ANSI Z535.4, CAN/CSA – Z431and CAN/CSA-Z321.

24.4 Documentation

24.4.1 The contractor must submit the Breaker Co-ordination and Arc Flash Hazard Analysis studies to the Technical Authority.

24.4.2 The Contractor must supply Certificates of Instrument Calibration for any instruments used in the study process.

24.4.3 The Contractor must provide the TA with the reports in pdf electronic format. The Contractor must also provide three (3) paper copies of the reports on 8.5 by 11 inch (minimum) paper.

25.0 POTABLE WATER TANK PIPING SYSTEM UPGRADE

25.1 Scope

25.1.1 For hygiene reasons, the Coast Guard requires replacement of the fitted discharge and suction piping used to fill and draw from the potable water tanks.
25.1.2 The Contractor must remove, dispose of, and replace the fill and suction piping to/from the six potable tanks.
25.1.3 The new piping will utilize all stainless steel fittings. For ease of installation the Coast Guard requires the use of Victaulic groove lock pipe fittings.
25.1.4 The Contractor must supply, install and commission the new piping and all other associated components to provide a fully functional and operational potable water system.

25.2 References

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

- C.S.A., Hull Construction Regulations, Marine Machinery Regulations;
- Drawing List.
- Griffon Potable Filling Piping Replacement (Griffon Refit 2016 Potable Water Fill Pipes.pdf)
- Griffon Potable Suction Piping Replacement (Griffon Refit 2016 Potable Water Suction Pipes.pdf)

Drawing Number	Description	Electronic
664-4200-10	Part of Pumping Arrg't	664-4200-10.pdf
G052016PW-1	CCGS Griffon – Potable Water Piping Replacement SH 1	G052016PW-1.dwg
G052016PW-2	CCGS Griffon – Potable Water Piping Replacement SH 2	G052016PW-2.dwg

25.3 Scope of Work – General

25.3.1 All material removed becomes property of the Contractor and is to be disposed of in accordance with Federal, Provincial and Municipal regulations and copies of disposal certificates provided to the Inspection Authority.
25.3.2 The Contractor must decommission the main potable water tank fill and suction piping systems onboard the vessel for the duration of the work period of this Specification.
25.3.3 In order to provide potable water to the ship during the duration of this work the contractor must stagger the work on the system to allow at least one tank available for domestic use. Alternatively, the contractor may supply potable water directly to the potable system at the pressure pumps. The contractor must be responsible for all materials and labour to hook up this shore supply.

25.3.4 The following spaces must be certified "Safe for Hot Work": cargo hold, pipe tunnel, workshop, upper and lower engine room, upper and lower motor room.

25.3.5 The contractor must make all attempts to minimize welding of the piping. All connections will be Victaulic groove lock type. All fittings must be Victaulic 304 schedule 40 type. Victaulic gaskets will be Grade E which are approved for potable water.

25.3.6 Where flange connections to existing system components are required the contractor must use weldable 150# rated 304 stainless steel slip on flanges.

25.3.7 Contractor must only use flat face flanges when connecting to bronze valves.

25.3.8 Where other welding is required the contractor must utilize 304 SS schedule 40 butt weld pipe fittings and pipe (to ASTM A403). Pipe bosses will be forged 304 stainless steel.

25.3.9 The contractor will submit welding schedules for the welding of 304 stainless steel pipe fittings prior to any welding of the potable water system.

25.3.10 The contractor must mechanically remove heat tint caused by welding from any wetted surface prior to pipe installation.

25.3.11 Where pipes transit bulkheads the contractor must weld the stainless pipe to the carbon steel bulkhead. The contractor will submit welding schedules for the welding of 304 stainless steel pipe to carbon steel prior to any welding of potable water bulkhead penetrations.

25.3.12 All pipe will be seamless schedule 40 type 304L stainless steel conforming to ASTM A312.

25.3.13 All gasket material to be the proper thickness and be Garlock 3000 Blue or equivalent. Gasket material subject to approval by the Technical Authority.

25.3.14 The contractor must clearly demonstrate to the technical authority the ability to groove the specified pipe to mate with Victaulic groove lock fittings.

25.3.15 All welded piping will be subject to a hydrostatic test of 150 psi after welding but before installation. The test will be witnessed by the Technical Authority and The attending TCMS surveyor.

25.4 Potable Water Fill System

25.4.1 The Contractor must disconnect and remove all potable water fill piping from the deck fill connections to the individual tank fill valves of tanks #3 and #4. The contractor must remove the piping to the tank flanges of the #1 tanks.

25.4.2 The contractor must not be required to renew the piping to the potable water transfer pump – this piping is new.

25.4.3 The contractor must note that the fill piping in the engine room workshop goes to both the port and starboard sides. The port side is not used so this is not to be renewed.

25.4.4 The Contractor must renew all pipe sections removed.

25.4.5 All valves in the system are to be clearly labeled, fully overhauled, and re-installed. Contractor to quote on 20 machining hours to overhaul the valves.

25.4.6 The contractor is responsible for the disconnecting and reconnecting of the reverse osmosis water maker feed.

25.5 Potable Water Suction System

25.5.1 The Contractor must disconnect and remove all potable water suction piping from the individual tank suction valves of tanks #3 and #4. The contractor must remove the piping to the tank flanges of the #1 tanks.
25.5.2 The Contractor must renew all pipe sections removed.
25.5.3 All valves in the system are to be clearly labeled, fully overhauled, and re-installed. Contractor to quote on 20 machining hours to overhaul the valves.
25.5.4 The contractor must renew the piping to the pressure pump suction valves.
25.5.5 The contractor must not be required to renew the suction piping to the potable water transfer pump – this piping is new.

25.6 Potable Water Chlorination Line Removal

25.6.1 The Griffon was originally fitted with a chlorination system for the potable water tanks. This system has been removed with the exception of the pipes to the #1 DB tank – these pipes are located within the pipe tunnel.
25.6.2 The Contractor must strip out and dispose of the 1-1/2" chlorination pipes running from the first flange aft of the forward pipe tunnel bulkhead to the ##1 DB tank connection – port and starboard.
25.6.3 The contractor must blank the forward bulkhead flanges with a steel 150# rated blank flange and gasket.
25.6.4 The contractor must blank the tank connection with a 304 stainless steel blank flange and suitable gasket.

25.7 Testing and Commissioning

25.7.1 The Contractor must schedule and conduct the **c**ommissioning tests of the potable water fill and suction system after final inspection.
25.7.2 The Contractor must develop a pressure test to ensure that the system is fully functional and leak free. This pressure test will be at a minimum 100 psi and witnessed by the Technical Authority.
25.7.3 The Contractor must ensure that the final installation is TCMS approved and inspected as such.
25.7.4 Defects and Re-Testing - any part of the potable water systems that prove to be defective during any part of the tests must be replaced or repaired to produce a fully operational and functional system. Such occurrences may render the tests void or require further testing to be carried out to the satisfaction of the Technical Authority.

25.8 Documentation

25.8.1 The contractor must provide documentation to show all materials meet the requirements outlined in this specification section.
25.8.2 The Contractor must supply pipe pressure test records.

26.0 ELCTRICAL POWER TERMINATION MAINTENANCE

26.1 General

26.1.1 The Coast Guard has a requirement to have a documented inspection of all electrical terminations above 14 AWG.
26.1.2 In addition to checking all connections above AWG 14, all motor and starter terminations of machinery not under continuous survey will be checked as well as all distribution panels.
26.1.3 As this task has not been performed on the Griffon before the contractor will be required to diligently document the cabling identified for reference in future inspections

26.2 References

Drawings:

Drawing Number	Drawing Title	
766401 Rev A10	Updated Electrical One Line Diagram CCGS Griffon	766401 A10 2016.dwg

Documents: Coast Guard Technical Bulletin 2014-06 (201406TB.pdf)
CCGS Griffon Refit 2016 - List of Electrical Components to be Inspected.xls.
Standards: TP127E – latest edition.

26.3 Technical

26.3.1 The Contractor must inspect the condition of all electrical connections of all components identified in the referenced list.
26.3.2 The connections to be checked will include all connections where the wire size exceeds AWG 14 as well as any other connections on the referenced list.
26.3.3 The contractor must clearly identify each connection. If the connection is not already identified the contractor must label the connection with a permanent tag suitable for the type of connection.
26.3.4 The connections must be verified tight in accordance with the tightening specifications in the reference CG Technical bulletin.
26.3.5 Any repairs requires as a result of this inspection will be covered under 1379 action.

26.4 Documentation

26.4.1 The documentation is a large part of the work on this specification item.
26.4.2 For EACH connection the contractor must provide the following:

- Location (compartment or space) (e.g. Emergency Generator Room, Upper Fan Room, lower engine room, etc.)

- Component (e.g. Emergency Switchboard frame 2, Upper HVAC Unit Control Panel, outboard purifier motor, etc.)
- Connection Identification (e.g. Emergency MCC Breaker Aft buss bar to socket connection, red wire out of the main contactor, terminal L1, etc.)
- Conductor size (e.. 2” x ¼” buss bar, #8 AWG wire, #14 AWG wire, etc.)
- Connection type (e.g. ½” NC Bolt, screw lug, Marrett, etc.)
- Date verified tight
- Comments (e.g. found loose, screw stripped, gasket replaced, etc.)

26.4.3 The report must be in MS Excel format broken down by compartment and component.

26.4.4 The Contractor must provide the TA with updated copies of the report in an electronic MS Excel format on CD-ROM media. The Contractor must also provide three (3) paper copies of the report on 8.5 by 11 inch paper.

27.0 FUEL TRANSFER MANIFOLD OVERHAUL

27.1 General

27.1.1 The Coast Guard has a requirement to overhaul the fuel transfer manifold – this component is original to the ship.
27.1.2 Coast Guard is not in possession of the original dimensional construction details for this manifold.
27.1.3 The existing manifold is fabricated from steel, non-galvanized, with bronze trim. Flanges are 4” - 150#. The lower portion of the manifold is divided into six compartments – one for each fuel tank. The upper portion of the manifold is divided into three compartments – discharge, port suction, and starboard suction. There are 12 x 4” bronze screw-lift valves in the manifold.
27.1.4 The fuel manifold is not to be overhauled on board the vessel.
27.1.5 In the original construction, all steel to bronze flange faces are flat. Due to the age of the vessel, flange diameters and bolt patterns may not be standard. It is the responsibility of the contractor to determine this and source the appropriate materials as required.

27.2 References

Drawings:

Drawing Number	Drawing Title	
664-4202-1	Fuel Oil Filling & Transfer and Service Systems Diag.	664-4201-1.pdf
664-4202-10	Fuel Oil Filling, Transfer & Service Piping Arrangement	664.4202-10.pdf

27.2.1 Documents:
27.2.2 Standards:

27.3 Technical - General

27.3.1 The Contractor must remove the existing fuel transfer manifold from the vessel and transport it to the contractor’s facility for assessment/repair. The Contractor is to ensure the manifold or pipe flanges are not damaged or distorted in any way.
27.3.2 For removal reference, the manifold dimensions are approximately 175cm x 50 cm x 30 cm with the valve bonnets and top studs removed. Exact dimensions of the manifold are to be determined by the Contractor.
27.3.3 The contractor is responsible for determining a safe removal route from the vessel.
27.3.4 The Contractor must return and install the repaired or new manifold.
27.3.5 Any piping or fittings that are disturbed by the Contractor to facilitate removal or installation of the manifold must be replaced at the contractor’s expense. Any gasket

materials disturbed are to be renewed at the contractor's expense. All gasket and packing materials are to be approved by the TA before installation.

27.4 Technical – Condition Assessment

27.4.1 The Contractor must identify, label, remove, disassemble, and clean all components of the fuel manifold.
27.4.2 The Contractor must inspect the condition of the internal valve seats and provide a condition report to the TA. This report must include measurements relevant to the valve seat including, but not limited to, seat angle, material, and remaining thickness.
27.4.3 The Contractor must inspect the removable components of the valve such as the valve disc, spindle, bonnet, glands, etc. and provide a condition report to the TA.
27.4.4 The Contractor must inspect the condition of the manifold including all sealing faces. The condition must be summarized in the condition report and provided to the TA.
27.4.5 After the condition report has been reviewed by the TA, the TA will determine if the manifold can be suitably renewed.

27.5 Technical – Overhaul

27.5.1 The contractor must dress the valve seats to remove any defects from their surface and return them to appropriate valve seat angle. Any valve seats that have insufficient material to dress properly must be renewed.
27.5.2 The valve discs must have their sealing edge dressed. Any valve discs with insufficient material for dressing must be renewed. Any guides for the valve disc that are damaged or not true must be repaired.
27.5.3 The valve bonnet and glands must have any deficiencies repaired. Wasted or damaged studs on the bonnets and the manifold are to be renewed.
27.5.4 The valve stems must be checked for true and condition. All the valves are Screw-Lift, it is essential that the valve stems are in good condition so that the valve disc affixes correctly to the stem.
27.5.5 The manifold must be brought to bare metal, primed, and repainted according the vessel paint schedule.
27.5.6 Valves are to be reassembled using new, contractor supplied packing and gaskets.
27.5.7 Valve spindle threads are to be coated with a suitable lubricant, approved for use by the TA.
27.5.8 The valve disc and seat contact area will be checked by bluing, to be witnessed and approved by the TA.
27.5.9 For bid purposes, the contractor must quote on 80 hours of machining on this overhaul.

27.6 Installation

27.6.1 The contractor is responsible for determining a safe route for bringing the manifold into the engine room.
27.6.2 The contractor must re-install the manifold with all new gaskets and fasteners.

27.7 Inspection, Test and Trials

27.7.1 Prior to installation, all valves must be blued and submitted for inspection/approval by the TA.

27.7.2 Prior to installation, each isolatable section of the manifold must be pressure tested to a minimum of 100 psi for 30 minutes to determine if there are internal leaks. The manifold consists of 6 lower sections and 3 upper sections for a total of 9 tests. Adjacent sections must not be tested simultaneously. Pressure tests are to be witnessed and approved by the TA.

27.7.3 After installation, the manifold is to be leak tested to check the flange fittings.

27.8 Documentation

27.8.1 The Contractor must provide the TA with a report detailing the work performed and repairs made.

27.8.2 The contractor must provide a pressure test report.

27.8.3 All documentation relating to this section must be provided as 3 written copies and 1 electronic copy, in English.

28.0 FALL ARREST POINTS

28.1 Identification

28.1.1 Griffon has identified several areas on the ship where fall arrest attachment points are required.

28.1.2 Griffon requires the installation of fall arrest points on the A-Frame, Funnel, Aft Mast and around the perimeter of the Wheelhouse.

28.1.3 Fall arrest attachment points for climbing the A-frame are to be adjacent to the existing port side ladders to aid personnel in transitioning from one ladder to the other and gaining access to the top of the A-Frame.

28.1.4 Fall arrest attachment points are also required on the A-frame either side and above the existing searchlights to allow personnel to safely work on the searchlights while on a ladder.

28.1.5 Fall arrest attachment points are required on the funnel adjacent to the existing ladder for cleaning and climbing in this area. Some will be steel and some aluminum.

28.1.6 Fall arrest attachment points are required on the climbing positions of the Aft Mast and for working atop the funnel.

28.1.7 Fall arrest attachment points are to be installed under the brow of the Wheelhouse to aid personnel when working on the exterior railing and cleaning and working on the Bridge windows. These points will be aluminum and must be installed in such a way that the Bridge windows are not adversely affected.

28.1.8 All fall arrest attachment points must be installed and tested according to the reference drawings in this section and according to Federal Marine Occupational Health and Safety Regulations.

28.2 References

Drawings

Drawing Number	Drawing Title	Electronic
664-135-5	Funnel Plan	G05A023E.pdf
664-9000-3 Sht 3 of 3	Flight & Boat Deck, Bridge, Nav. Bridge Decks, & Wheelhouse Top Scantlings	G05A0505.pdf
664-16-3	Aft Mast	G05A0800.pdf
664-16-4	Fwd Mast	G05A0837.pdf
732931 Sht 1 0f 1 RevC	Boat, Bridge and Nav. Bridge Deck – Joiner Bulkheads and Linings	732931.pdf
C16-09-160-01 Rev1 Sht 1 of 2	Fall Arrest Point	C16-09-160-01 Rev1 task 7.pdf
C16-09-160-01 Rev1 Sht 2 of 2	Fall Arrest Point	C16-09-160-01 Rev1 task 7.pdf

28.2.1 Documents
Photo – Starboard Searchlight Fall Arrest Points.pdf
Photo – Port Searchlight Fall Arrest Points

28.2.2 Standards
Fleet Safety Manual, Latest Edition, 7.B.2. Fall Protection
Federal Marine Occupational Health and Safety Regulations, Part 10 (144)

28.3 Technical General

28.3.1 The Contractor must be responsible for all removals, materials, labour, equipment, cranage in order to complete the work.

28.3.2 The attachment points must be Contractor supplied and must conform to the reference drawings provided in this section.

28.3.3 All removals must be reinstalled in an "as original existing" state at the completion of the work. All removals damaged during removal must be replaced with new at the Contractors expense.

28.3.4 All equipment in the vicinity of the work or below must be adequately protected from damage. Any damage that occurs to equipment as a result of the Contractors work must be repaired at the Contractors expense.

28.3.5 For all attachment points, the area for hotwork must be prepared for welding by grinding off all coatings to bare metal. The Contractor must submit a welding schedule for each point to the Technical Authority for review prior to welding.

28.3.6 All welding must be submitted to visual inspection by the Technical Authority prior to coating.

28.3.7 All fall arrest points must be proof tested and submitted to NDT examination according to the reference documents in this section. This must be the responsibility of the Contractor.

28.4 Technical – A-Frame Fall Arrest Points

28.4.1 The Contractor must take adequate precautions to ensure all equipment in the vicinity and below is protected from damage. In particular, the port and starboard crane cabs, searchlights, and radar waveguides must be covered to prevent damage prior to the work commencing.

28.4.2 The Contractor must co-ordinate the installation of the A-Frame fall arrest points in conjunction with the work performed in Section 19 Installation of Forward Searchlights.

28.4.3 The Contractor must install fall arrest attachment points along the climbing path on the port side of the A-Frame as per the reference drawing provided.

28.4.4 The Contractor must install fall arrest attachment and work positioning points in the area of the existing port and starboard searchlights according to the reference drawings provided.

28.5 Technical – Funnel Fall Arrest Points

28.5.1 The Contractor must install fall arrest attachment points along the vertical climbing path on the starboard side of the funnel according to the attached reference drawing.

28.5.2 The Contractor must note that the ladder and funnel are aluminum. The bottom of the funnel is riveted to a 12 inch steel coaming.

28.6 Technical – Aft Mast Fall Arrest Point

28.6.1 The Contractor must install a fall arrest attachment point at the transition between the aft ladder and the starboard upper ladder according to the attached reference drawing.
28.6.2 The Contractor must note the Aft Mast is aluminum construction.

28.7 Technical – Wheelhouse Fall Arrest Point

28.7.1 The Contractor must co-ordinate the work in this section with Section 10 Mounting of Iridium Antenna.
28.7.2 The Contractor must take all precautions necessary to protect damage to the Bridge windows and any other equipment in the vicinity of the work.
28.7.3 All superstructure windows below the area of work must be protected from damage.
28.7.4 The Contractor must ensure distortion due to hotwork in the area of each attachment point is kept to a minimum. Extreme caution must be exercised to prevent any damage to the Bridge windows in the preparation, installation, testing or coating of the Wheelhouse fall arrest points.
28.7.5 The Contractor must install 15 fall arrest points on the exterior perimeter of the Wheelhouse plating, under the brow and as per the reference drawing.

28.8 Technical - Coatings

28.8.1 All new and disturbed metal in the vicinity of all new fall arrest points must be adequately prepared for painting. Metal surfaces to be coated must be wire brushed to bare metal and cleaned in preparation for painting.
28.8.2 All new and disturbed steel must be coated with two coats of marine grade primer.
28.8.3 All new and disturbed aluminum must be coated with two coats of marine grade aluminum primer.
28.8.4 All disturbed and new metal in the vicinity of new A-frame fall arrest points must be coated with the following paint scheme:

- First coat: Interprime Red CPA 234 Red
- Second coat: Interprime White CPA 235 White
- Third coat: Interlac 665 Buff RAL: Design 070 7040

28.8.5 All disturbed and new metal in the vicinity of the Funnel fall arrest point must be coated with the following paint scheme:
First Coat: Aluminum Primer Interprime 539 Grey
Second Coat & Third Coat: Aluminum Primer Interprime 198 White
Third Coat: Interlac 665 Signal White, RAL 9003

28.8.6 All disturbed and new metal in the vicinity of the Aft Mast fall arrest point must be coated with the following paint scheme:
First coat: Aluminum Primer Interprime 539 Grey

Second coat and Third coat: Aluminum Primer Interprime 198 White
Third coat: Interlac 665 Buff RAL: Design 070 7040

28.8.7 All new and disturbed metal in the vicinity of the Wheelhouse fall arrest points must be coated with the following paint scheme:
First Coat: Aluminum Primer Interprime 539 Grey
Second Coat & Third Coat: Aluminum Primer Interprime 198 White
Third Coat: Interlac 665 Signal White, RAL 9003

28.9 Inspections, Tests and Trials

28.9.1 All anchor points must be tested according to the reference drawings provided and comply with all applicable regulations. At minimum, all anchor points must be proof tested in such a way that the anchor point must sustain a force of 17.8 kN.
28.9.2 All testing must be witnessed by the Technical Authority.
28.9.3 All proof testing must be the responsibility of the Contractor.
28.9.4 All fall arrest point welds must be NDT tested after proof testing is completed.
28.9.5 All NDT testing must be the responsibility of the Contractor and performed by a qualified and certified NDT technician.
28.9.6 All testing must be completed and results submitted to the Technical Authority prior to any coatings being applied.

28.10 Documentation

28.10.1 The Contractor must provide proof of valid and current certification for the NDT technican.
28.10.2 The Contractor must provide a report of all tests, inspections, NDT results for each fall arrest point. Each fall arrest point must be listed and must have a unique identification number and a description as to its location and material.

29.0 REPLACEMENT OF WHEELHOUSE TELEGRAPHS

29.1 General

29.1.1 The Coast Guard has a requirement for replacement of the Wheelhouse Engine Order Telegraphs with new units.

29.1.2 The Wheelhouse Engine Order Telegraph system consists of one center console double EOT and two wing levers connected by "electrical shaft" Port and Starboard which allow the wing units to function as master units when selected.

29.1.3 The new telegraphs will be GSM.

29.2 References

Drawings

Drawing Number	Drawing Title	Electronic
A067 Double EOT System	A067 Double EOT System – set of 16 drawings. Techsol Electrotechnique	Double EOT System A067.pdf

29.2.1 Contacts:
Manufacturer: Stein Sohn
Supplier and Service: Interschalt Marine Systems AG
Eichkamp 15, 24217 Schönberg
Germany
Phone: +49 (0)4344 307-206
Fax: +49 (0)4344-290
E-Mail: martin.lengwenat@interschalt.de
Web: www.interschalt.de
Headquarters:
INTERSCHALT maritime systems AG
Osterbrooksweg 42, 22869 Schenefeld
GERMANY
Phone: +49 (0)40 83033 – 0
Fax: +49 (0)40 83026 - 17

29.2.2 Specification:
Center Console:
Double Engine Telegraph, Interschalt Part # 107741
A067.4343-4X1-0611

Wing Consoles:
Lever, Interschalt Part #107740
A067.3253-000-0611
Ser. # IS-EOT-15-1611 & #IS-EOT-15-1612

29.2.3 Documents
Stein Sohn Engine Telegraph System Type A067 User's Manual – Filename: mtbus_e.pdf

29.2.4 Standards
TP 127E, Transport Canada Marine Safety Electrical Standard, Latest Edition.
IEEE Standard 45, Recommended Practice for Electrical Installation on Ships.
CGTS-3(E), General Specification for the Installation of Shipboard Electronic Equipment.
Fleet Safety Manual, Latest Edition, 7.B.5. Lockout and Tagout.

29.3 Technical – General

29.3.1 The Contractor must be responsible for all labor and equipment required in order to complete the work.

29.3.2 All removals must be the responsibility of the Contractor.

29.3.3 The Contractor must employ the services of a marine electrician to perform the work in this specification. This tradesperson must have working knowledge of modern electronic ship's telegraph systems.

29.4 Removals

29.4.1 The Contractor must isolate and lockout all power sources to the telegraph system prior to commencing the work. The Contractor must note there is 24VDC power originating from the power supply and from the battery bank. The Contractor must consult the drawings provided in order to determine the sources of power.

29.4.2 The Contractor must record the position of all existing configuration switches and any other nameplate configuration data on all Wheelhouse telegraphs prior to commencing removals. The serial numbers of all units must be recorded as to console position.

29.4.3 The Contractor must consult the reference drawings to establish all wiring that is to be disconnected and must identify and label the wires as required in order to properly reconnect once the new telegraphs have been installed.

29.4.4 The Contractor must disconnect the power supply and mtbus RS 485 wires for each telegraph and loosely secure them out of the way of work.

29.4.5 The Contractor must release and store for reuse the fasteners securing the telegraphs to the console mosaic.

29.4.6 The Contractor must carefully remove the telegraphs from their respective consoles. Any equipment or mosaic damaged as a result of the work must be repaired at the Contractor's expense.

29.4.7 The Contractor must protect the old telegraphs from damage.

29.4.8 The Contractor must return the old telegraphs to Coast Guard.

29.5 Installation

29.5.1 The Contractor must be responsible for comparing the parts numbers and hardware configuration settings of the old units to the new units and ensuring the configuration settings of the new units is identical to what was removed.

29.5.2 The Contractor must carefully install the new units with new foam gaskets into their respective console cutouts. The original fastening hardware must be reused.

29.5.3 The Contractor must reconnect all power supply and RS 485 bus wires and all other wiring that was disconnected in order to perform the work. All loose wiring in the vicinity of the telegraphs must be secured with nylon tie wraps.

29.5.4 Prior to applying power to the Wheelhouse telegraph system the Contractor must consult the Stein Sohn User's Manual and perform the "Install and Commissioning" adjustments for the alignment of the telegraph's potentiometer, pointer and current output.

29.6 Inspections, Tests and Trials

29.6.1 The Contractor must verify the VDR on each mtBUS controller under the propulsion mimic in the MCR. It must not show an error message. The Contractor must investigate and clear any error messages prior to continuing.

29.6.2 The Contractor must perform a lamp test on each telegraph in the presence of the Technical Authority prior to testing functionality. Any lamps not functional must be repaired.

29.6.3 The Contractor must submit the new telegraph system to functional tests. The tests must be witnessed by the Technical Authority. The tests must include the following:

1) transfer of control to/from Engine Room to Wheelhouse,
2) transfer of control to/from Wheelhouse Center unit to each wing console,
3) ability of the telegraphs to control the propulsion in all speeds and directions at each console,
4) proper operation of the dimmer circuits,
5) functionality of the misalignment alarm,
6) proper illumination and functionality of all indicator lights.

29.6.4 In the case where the propulsion system is not available for testing the telegraphs due to other work in progress, the Contractor must be responsible for proving the system functionality as stated above and also that the required reference signals are being received by the analog calibration cards in the MCR.

29.6.5 Any functionality problems must be corrected by the Contractor at the Contractor's expense.

29.7 Documentation

29.7.1 The Contractor must provide a report detailing the following:

1) Model, Serial Number and position of each new unit,
2) Configuration settings for each new unit,
3) All test results including test date and witness signatures.