



RETURN BIDS TO:

RETOURNER LES SOUMISSIONS À:

**Bid Receiving Public Works and Government
Services Canada/Réception des soumissions
Travaux publics et Services gouvernementaux
Canada**
1713 Bedford Row
Halifax, N.S./Halifax, (N.É.)
B3J 1T3
Bid Fax: (902) 496-5016

INVITATION TO TENDER

APPEL D'OFFRES

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

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

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

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

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Atlantic Region Acquisitions/Région de l'Atlantique
Acquisitions
1713 Bedford Row
Halifax, N.S./Halifax, (N.É.)
B3J 3C9
Nova Scot

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|--|--|
| Title - Sujet Refit - CCGS G. Peddle | |
| Solicitation No. - N° de l'invitation F5561-151049/A | Date 2016-01-06 |
| Client Reference No. - N° de référence du client F5561-15-1049 | GETS Ref. No. - N° de réf. de SEAG PW-\$HAL-403-9737 |
| File No. - N° de dossier HAL-5-75220 (403) | CCC No./N° CCC - FMS No./N° VME |
| Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2016-01-27 | |
| Time Zone Fuseau horaire Atlantic Standard Time AST | |
| F.O.B. - F.A.B. | |
| Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/> | |
| Address Enquiries to: - Adresser toutes questions à: Brow, Theresa | Buyer Id - Id de l'acheteur hal403 |
| Telephone No. - N° de téléphone (902) 496-5166 () | FAX No. - N° de FAX (902) 496-5016 |
| Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF FISHERIES AND OCEANS MARITIMES REGIONAL HQ BLDG 50 DISCOVERY DR - LEVEL 4 DARTMOUTH NOVA SCOTIA B2Y4A2 Canada | |

Instructions: See Herein

Instructions: Voir aux présentes

| | |
|--|--|
| 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 |

TABLE OF CONTENTS

PART 1 - GENERAL INFORMATION

- 1.1. Introduction
- 1.2. Summary
- 1.3. Debriefings

PART 2 - BIDDER INSTRUCTIONS

- 2.1. Standard Instructions, Clauses and Conditions
- 2.2. Submission of Bids
- 2.3. Enquiries - Bid Solicitation
- 2.4. Applicable Laws
- 2.5. Bidders' Conference
- 2.6. Site Visit
- 2.7. Work Period Marine

PART 3 - BID PREPARATION INSTRUCTIONS

- 3.1. Bid Preparation Instructions

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

- 4.1. Evaluation Procedures
- 4.2. Basis of Selection
- 4.3. Public Bid Opening

PART 5 - CERTIFICATIONS

- 5.1. General
- 5.2. Certifications Precedent to Contract Award
- 5.3. Certifications Required with Bid
- 5.4. Code of Conduct Certifications

PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

- 6.1. Security Requirement
- 6.2. Financial Capability
- 6.3. Insurance Requirements
- 6.4. Workers Compensation Certification
- 6.5. Welding Certification
- 6.6. Valid Labour Agreement
- 6.7. Project Schedule
- 6.8. Safety Measures for Fuel
- 6.9. ISO 9001
- 6.10. List of Proposed Subcontractors

PART 7 - RESULTING CONTRACT CLAUSES

- 7.1. Requirement
- 7.2. Standard Clauses and Conditions
- 7.3. Security Requirement
- 7.4. Term of Contract - Work period - Marine
- 7.5. Authorities

- 7.5.1 Contracting Authority
- 7.5.2 Inspection Authority
- 7.5.3 Technical Authority
- 7.5.4 Project Authority
- 7.6. Payment
 - 7.6.1 Basis of Payment
 - 7.6.2 Method of Payment - Single Payment
 - 7.6.3 SACC Manual Clauses
- 7.7. Invoicing Instructions
- 7.8. Certifications
- 7.9. Applicable Laws
- 7.10. Priority of Documents
- 7.11. Insurance Requirements
- 7.12. Financial Security - not used
- 7.13. Accommodations - not used
- 7.14. Parking - not used
- 7.15. Sub Contractors List
- 7.16. Work Schedule and Reports
- 7.17. Insulation Materials - Asbestos Free
- 7.18. Loan of Equipment - Marine
- 7.19. Trade Qualifications
- 7.20. Material and Supply Support - not used
- 7.21. ISO 9001:2000 Quality Management System
- 7.22. Quality Control Plan - not used
- 7.23. Welding Certification
- 7.24. Environmental Protection
- 7.25. Supervision of Fuelling and Disembarking of Fuel
- 7.26. Procedures for Design Change or Additional Work
- 7.27. Equipment/Systems Inspection/Test - not used
- 7.28. Inspection and Test Plan - not used
- 7.29. Vessel Custody - not used
- 7.30. Vessel Manned Refit – not used
- 7.31. Pre-refit Meeting
- 7.32. Progress Meetings
- 7.33. Outstanding Work and Acceptance
- 7.34. Licensing
- 7.35. Hazardous Waste
- 7.36. Government Site Regulations - not used
- 7.37. Scrap and waste Material
- 7.38. Workers Compensation

List of Annexes:

| | |
|-----------|--|
| Annex "A" | Statement of Work |
| Annex "B" | Basis of Payment |
| Annex "C" | Insurance Requirements |
| Annex "D" | Consent to a Criminal Record Verification |
| Annex "E" | Warranty Defect Claim Procedures and Forms |
| Annex "F" | not used |
| Annex "G" | Vessel Custody – not used |
| Annex "H" | Project Management Services - not used |
| Annex "I" | Financial Bid Presentation Sheet |
| Annex "J" | Required Certifications |
| Annex "K" | Information Required for Code of Conduct Certification |

PART 1 - GENERAL INFORMATION

1.1. Introduction

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

Part 1 General Information: provides a general description of the requirement;

Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation and states that the Bidder agrees to be bound by the clauses and conditions contained in all parts of the bid solicitation;

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

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

Part 5 Certifications: includes the certifications to be provided;

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

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

The Annexes include the Statement of Work; the Basis of Payment; Insurance Requirements; Warranty; Custody; Project Management Services; Financial Bid Presentation Sheet; Required Certifications; and Information Required for Code of Conduct Certification.

1.2 Requirement

1. The Statement of Work is;

a) to carry out the alongside refit of the Canadian Coast Guard Vessel **CCGS G PEDDLE** in accordance with the associated Technical Specifications detailed in the Statement of Work at Annex A .

b) to carry out any approved unscheduled work not covered in paragraph a) above.

2. There is no industrial security requirement associated with this solicitation. Other security requirements are outlined in Part 7, Article 3.

3. The requirement is exempt from the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), Annex 4 and the North American Free Trade Agreement (NAFTA), Chapter Ten Annex 1001.2b Paragraph 1; however, it is subject to the Agreement on Internal Trade (AIT) and will be limited to suppliers in Eastern Canada in accordance with Shipbuilding, Refit, Repair and Modernization Policy (1996-12-19).

4. Pursuant to section 01 of Standard Instructions 2003 and 2004, a Consent to a Criminal Record Verification form, must be submitted with the bid, by the bid solicitation closing date, for each individual who is currently on the Bidder Board of Directors.

5. Work period: The proposed work period is

Commencement: 18 January 2016
Completion: 18 March 2016.

1.3 Debriefings

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

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

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

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

The 2003 (2015-09-03) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Section 07(3) of 2003, Standard Instructions - Goods or Services are amended as follows:

Delete: Furthermore, the Bidder must send a written confirmation of the bid within two (2) working days after bid closing, unless specified otherwise in the bid solicitation. All documents confirming bids should bear the word "CONFIRMATION".

2.2 Submission of Bids

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

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than 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 bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a "proprietary" nature must be clearly marked "proprietary" at each relevant item. Items identified as proprietary will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

2.4 Applicable Laws

1. Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Nova Scotia.
2. The Bidder may, at its discretion, substitute the applicable laws of a Canadian province or territory of its choice without affecting the validity of its bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of its choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the Bidder.

2.5 Bidders' Conference –

A Bidders conference will be held onboard the vessel alongside at Bedford Institute of Oceanography, Dartmouth NS at 10:00am on 06 January 2016.

Bidders are requested to communicate with the Contracting Authority before the conference to confirm attendance. Bidders should provide, in writing, to the Contracting Authority, the names of the person(s) who will be attending and a list of issues they wish to table at least Two (2) working days before the scheduled conference.

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

2.6 Optional Site Visit - Vessel

It is recommended that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for a tour of the vessel. The visit will be held also on 06 January 2016 alongside at BIO. Bidders are requested to communicate with Tim Matthews (902) 446-4384 two (2) days before the scheduled visit to confirm attendance and provide the name(s) of the person(s) who will attend. Bidders may be requested to sign an attendance form. Bidders who do not attend or send a representative will not be given an alternative appointment but they will not be precluded from submitting a bid. Any clarifications or changes to the bid solicitation resulting from the site visit will be included as an amendment to the bid solicitation.

2.7 Work Period - Marine

1. Work must commence and be completed as follows

Commencement: 18 January 2016
Completion: 18 March 2016.

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

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Canada requests that bidders provide their bid as follows:

| | |
|-------------|---|
| Section I: | Financial Bid (1 hard copy) |
| Section II: | Certifications Requirements (1 hard copy) |

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

If bids are submitted by facsimile in accordance with 2003 Standard Instructions, Section 07(3), as modified under Part 2, Article 1, then the bid should be provided in the same format as for hard copies.

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

To assist Canada in reaching its objectives, bidders are encouraged to :

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

Section I: Financial Bid

Bidders must submit their financial bid in accordance with the Financial Bid Presentation Sheet at Annex I and the detailed Pricing Data Sheet, Appendix 1 to Annex I. Bidders must also submit the ITT completed and signed.

Vessel Refit, Repair or Docking - Cost

The following costs must be included in the evaluation price:

1. **Services not applicable**
2. **Docking and Undocking** – not applicable
3. **Field Service Representatives/Supervisory Services:** include all costs for field service representatives/supervisory services including manufacturers' representatives, engineers, etc. These services must not be an extra charge except where unscheduled work requiring these services is added to the Contract.
4. **Removals:** include all costs for removals necessary to carry out the Work and will be the responsibility of the successful Bidder whether or not they are identified in the specifications, except those removals not apparent when viewing the vessel or examining the drawings. The successful Bidder will also be responsible for safe storage of removed items and reinstalling them on completion of the Work. The successful Bidder will be responsible for renewal of components damaged during removal.

5. **Staging, Cranage and Transportation:** include the cost of all staging including handrails, cranage and transportation to carry out the Work as specified. The successful Bidder will be responsible for the cost of any necessary modification of these facilities to meet applicable safety regulations.

Section II: Certification Requirements

Bidders must submit the certifications required in accordance with Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.

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

4.2 Basis of Selection

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

4.3 Public Bid Opening

A public bid opening will be held at the Public Works and Government Services Office, 1713 Bedford Row, Halifax, Nova Scotia at 1400 hrs. ADT on 12 January 2016.

PART 5 - CERTIFICATIONS

5.1 General

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

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

5.1.1 Declaration of Convicted Offences

As applicable, pursuant to subsection Declaration of Convicted Offences of section 01 of the Standard Instructions, the Bidder must provide with its bid, a completed [Declaration Form](http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html>), to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award

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

1. Insurance Certification as per Part 6.3 and Annex C
2. Workers compensation letter of good standing as per Part 6.4
3. Welding Certification as per Part 6.5
4. Labour agreement as per Part 6.6
5. Project Schedule as per Part 6.7
6. Safety Measures for Fuel information as per Part 6.8
7. ISO 9001 registration documentation as per Part 6.9
8. Docking facility certification as per Part 6.10
9. Subcontractors list as per Part 6.11
10. Federal Contractors Program for Employment Equity - Certification as per 6.12 and Annex J
11. Code of Conduct Information Required as per 5.4 and Annex K

5.3 Certifications Required with the Bid

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

1. Tender Document completed and signed.
2. Pricing information and pricing data sheets as contained in Annex "I" and Appendix 1 to Annex I.

5.4 Code of Conduct Certifications - Certifications Required Precedent to Contract Award

Bidders should provide, with their bid or promptly thereafter, a complete list of names of all individuals who are currently directors of the Bidder. If such a list has not been received by the time the evaluation of bids is completed, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Bidders must submit the list of directors before contract award, failure to provide such a list within the required time frame will render the bid non-responsive.

The Contracting Authority may, at any time, request that a Bidder provide properly completed and Signed Consent Forms (Consent to a Criminal Record Verification form - PWGSC-TPSGC 229) (<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>) for any or all individuals named in the aforementioned list within a specified delay. Failure to provide such Consent Forms within the delay will result in the bid being declared non-responsive.

PART 6 - FINANCIAL, SECURITY AND OTHER REQUIREMENTS

6.1 Security Requirement

There is no industrial security requirement associated with this requirement.

6.2 Financial Capability

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

6.3 Insurance Requirements

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

If the information is not provided in the bid, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

6.4 Workers Compensation - Letter of Good Standing

The Bidder must have an account in good standing with the applicable provincial or territorial Workers' Compensation Board. The Bidder must provide, within two (2) working days, following a request from the Contracting Authority, a certificate or letter from the applicable Workers' Compensation Board confirming the Bidder's good standing account. Failure to comply with the request may result in the bid being declared non-responsive.

6.5 Welding Certification

1. Welding must be performed by a welder certified by the Canadian Welding Bureau and in accordance with the requirements of the following Canadian Standards Association (CSA) standards:
 - (a) CSA W47.1-03, Certification of Companies for Fusion Welding of Steel (*Minimum Division Level 2.1*);
2. Before contract award and within two (2) working days of the written request by the Contracting Authority, the successful Bidder must submit provide evidence demonstrating its certification to the welding standards. In addition, welding must be done in accordance with the requirements of the applicable drawings and specifications.

6.6 Valid Labour Agreement

If the Bidder has a labour agreement, or other suitable instrument, in place with its unionized labour or workforce, it must be valid for the proposed period of any resulting contract. Before contract award and within two (2) working days of written notification by the Contracting Authority, the successful Bidder must provide evidence of that agreement.

6.7 Project Schedule

Before contract award and within two (2) working days of written notification by the Contracting Authority, the successful Bidder must propose its preliminary project schedule, in Gantt chart or detailed bar chart format. The project schedule must include the Bidder's work breakdown structure; the scheduling of main activities and milestone events; and any potential problem areas involved in completing the Work.

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.

Before contract award and within two (2) working days of written notification by the Contracting Authority, the successful Bidder must provide details of its safety measures for fueling and disembarking fuel, together with the name and experience of the person in charge of this activity.

6.9 ISO 9001:2000 - Quality Management Systems

Before contract award and within two (2) working days of written notification by the Contracting Authority, the successful Bidder must provide its current ISO Registration Documentation indicating its registration to ISO 9001:2000. Documentation and procedures of bidders not registered to the ISO standards may be subject to a Quality System Evaluation (QSE) by the Inspection Authority before award of a contract.

6.10 Docking Facility Certification

Not applicable

6.11 List of Proposed Subcontractors

If the bid includes the use of subcontractors, the Bidder agrees, within two (2) working days of written notification from the Contracting Authority, to provide a list of all subcontractors including a description of the things to be purchased, a description of the work to be performed and the location of the performance of that work. The list should not include the purchase of off-the-shelf items, software and such standard articles and materials as are ordinarily produced by manufacturers in the normal course of business, or the provision of such incidental services as might ordinarily be subcontracted in performing the Work.

6.12 Inspection and Test Plan

Before Contract award and within five (5) working days of written notification by the contracting authority, the successful bidder may be required to provide an example of its Inspection Plan.

6.13 Environmental Protection

Before contract award and within 24 hours of written notification by the contracting authority the successful Bidder must provide the details of its environmental emergency response plans, waste management procedures and/or formal environmental training undertaken by its employees. In addition the successful bidder must submit samples of its processes and procedures pertinent to the completion of the work.

PART 7 - RESULTING CONTRACT CLAUSES

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

7.1 Statement of Work

The Contractor must:

- a) Carry out the alongside refit of the Canadian Coast Guard Vessel CCGS HUDSON in accordance with the associated Technical Specifications detailed in the Statement of Work attached as Annex A; and
- b) Carry out any approved unscheduled work not covered in paragraph (a) above.

7.2 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the Standard Acquisition Clauses and Conditions (SACC) Manual issued by Public Works and Government Services Canada (PWGSC). The Manual is available on the PWGSC Website: (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>)

7.2.1 General Conditions

2030 (2014-03-01) General Conditions - Goods - Higher Complexity

7.2.2 Supplemental General Conditions

1029 (2010-08-16) Ship Repairs

7.3 Security Requirement

1. There is no industrial security requirement associated with this contract.
2. Access to Port Facilities and Government vessels is controlled. The Contractor must comply with applicable requirements. A system of positive identification, sign-in and out, and wearing of identification badges while within Port facilities or on board Government vessels is required.
3. The Contracting and the Technical Authority reserve the right to direct that Contractors personnel be security cleared as necessary.

7.4 Term of Contract

7.4.1 Work Period- Marine

1. Work period: The proposed work period is
Commencement: 18 January 2016
Completion: 18 March 2016.
2. The Contractor certifies that they have sufficient material and human resources allocated or available and that the above work period is adequate to both complete the known work and absorb a reasonable amount of unscheduled work.

7.5 Authorities

7.5.1 Contracting Authority

The Contracting Authority for the Contract is:
Theresa Brow, Marine Supply Specialist
Public Works and Government Services Canada
Acquisitions Branch, Atlantic Region
1713 Bedford Row, Halifax, Nova Scotia B3J 3C9

Telephone: (902) 496-5166
Facsimile: (902) 496-5016
E-mail address: theresa.brow@pwgsc-tpsgc.gc.ca

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

7.5.2 Inspection Authority

The Inspection Authority is responsible for inspection of the Work and acceptance of the finished work. The Inspection Authority will be represented on-site by an assigned on-site Inspector and any other departmental inspectors who will from time to time be assigned in support of the designated inspector.

7.5.3 Project Authority

The Project Authority for the Contract will be Tim Matthews (902) 446-4384.

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority; however, the Project 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.

7.5.5 Contractor's Representative

Name:
Title:
Telephone: Fax:
Email:

7.6 Payment

7.6.1 Basis of Payment - Firm Price or Firm Lot Price

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a "firm price", as specified in Annex "B of \$ TBD. Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

7.6.2 Method of Payment - Single Payment

Canada will pay the Contractor upon completion and delivery of the Work in accordance with the payment provisions of the Contract if:

- a) an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b) all such documents have been verified by Canada;

- c) the Work delivered has been accepted by Canada.

7.6.3 SACC Manual Clauses

C6000C (2011-05-16) Limitation of Price
C0711C (2008-05-12) Time Verification

7.7 Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.
2. Invoices must be distributed as follows:
 - (a) The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.
 - (b) One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

7.8 Certifications

SACC Manual Clause A3015C (2008-12-12) Certifications

7.9 Applicable Laws

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

7.10 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 general conditions 2030 (2015-09-03) General Conditions - Goods (Higher Complexity);
- (c) the supplemental general conditions 1029 (2010-08-16) Ship Repairs;
- (d) Annex A, Statement of Work;
- (e) Annex B, Basis of Payment;
- (f) Annex C, Insurance Requirements;
- (g) Annex D, Consent to a Criminal Record Verification (PWGSC-TPSGC 229);
- (h) Annex E, Warranty;
- (i) Annex F, Not Used;
- (j) Annex G, Not Used;
- (k) Annex H, Not Used;
- (l) Annex I, Financial Bid Preparation Sheets;
- (m) Annex J, Required Certifications;
- (n) Annex K, Information Required for Code of Conduct Certification; and
- (o) the Contractor's bid dated

7.11 Insurance Requirements

The Contractor must comply with the insurance requirements specified in Annex C. The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements 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) 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.

7.12 Accommodation – not used

7.13 Parking – not used

7.14 NOT USED

7.15 Sub-Contractors 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.

7.16 Work Schedule and Reports

No later than three (3) Working Days after contract award, the preliminary schedule must be revised and expanded as necessary and resubmitted before commencement of the Work. The Contractor must provide a detailed work schedule showing the commencement and completion dates for the Work in the available work period, including realistic target dates for significant events. During the work period the schedule is to be reviewed on an ongoing basis by the Inspection Authority and the Contractor, updated when necessary, and available in the Contractor's office for review by Canada's authorities to determine the progress of the Work.

The schedules must be revised on a predefined basis. The revised schedules must show the effect of progressed work and approved work arising. Changes in scheduled completion dates due to unscheduled work will not be accepted except as negotiated under Design Change or Additional Work clause.

7.17 Insulation Materials - Asbestos Free

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

7.18 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.

7.19 Trade Qualifications

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

7.20 NOT USED

7.21 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 9001:2000 - Quality management systems - Requirements, published by the International Organization for Standardization (ISO), current edition at date of submission of the Contractor's bid with the exclusion of the following requirement:

Design and development

It is not the intent of this clause to require that the Contractor be registered to the applicable standard; however, the Contractor's quality management system must address each requirement contained in the standard.

Assistance for Government Quality Assurance (GQA):

The Contractor must provide the Inspection Authority with the accommodation and facilities required for the proper accomplishment of GQA and must provide any assistance required by the Inspection Authority for evaluation, verification, validation, documentation or release of product.

The Inspection Authority must have the right of access to any area of the Contractor's or Subcontractor's facilities where any part of the Work is being performed. The Inspection Authority must be afforded unrestricted opportunity to evaluate and verify Contractor conformity with Quality System procedures and to validate product conformity with contract requirements. The Contractor must make available, for reasonable use by the Inspection Authority, the equipment necessary for all validation purposes. Contractor personnel must be made available for operation of such equipment as required.

When the Inspection Authority determines that GQA is required at a subcontractor's facilities, the Contractor must provide for this in the purchasing document and forward copies to the Inspection Authority, together with relevant technical data as the Inspection Authority may request.

The Contractor must notify the Inspection Authority of non-conforming product received from a subcontractor when the product has been subject to GQA.

7.22 NOT USED

7.23 Welding Certification

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

(a) CSA W47.1-03, Certification for Companies for Fusion Welding of Steel Structures Minimum division level 2.0;

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

3. Prior to the commencement of any fabrication work, and upon request from the Inspection Authority, the Contractor must provide approved welding procedures and/or a list of welding personnel he intends to use in the performance 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.

7.24 Environmental Protection

The Contractor and its subcontractors engaged in the Work on a Canadian Government vessel must carry out the Work in compliance with applicable municipal, provincial and federal environmental laws, regulations and industry standards.

The Contractor must have detailed procedures and processes for identifying, removing, tracking, storing, transporting and disposing of all potential pollutants and hazardous material encountered, to ensure compliance as required above. All waste disposal certificates are to be provided to the Inspection Authority, with information copies sent to the Contracting Authority. Furthermore, additional evidence of compliance with municipal, provincial and federal environmental laws and regulations is to be furnished by the Contractor to the Contracting Authority when so requested.

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

7.25 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.

7.26 Procedures for Design Change or Additional Work

The following procedures must be followed for any design change or additional work.

1. When Canada requests design change or additional work:

(a) The Technical Authority will provide the Contracting Authority with a description of the design change or additional work in sufficient detail to allow the Contractor to provide the following information:

- i) any impact of the design change or additional work on the requirement of the Contract;
 - (ii) a price breakdown of the cost (increase or decrease) associated with the implementation of the design change or the performance of the additional work using either the Form PWGSC1686, Quotation for Design Change or Additional Work, or the Form PWGSC 1379, Work Arising or New Work, or any other form required by Canada;
 - (iii) a schedule to implement the design change or to perform the additional work and the impact on the contract delivery schedule.
 - (b) The Contracting Authority will then forward this information to the Contractor.
 - (c) The Contractor will return the completed form to the Contracting Authority for evaluation and negotiation. Once agreement has been reached, the form must be signed by all parties in the appropriate signature blocks. This constitutes the written authorization for the Contractor to proceed with the work, and the Contract will be amended accordingly.
2. When the Contractor requests design change or additional work:
- (a) The Contractor must provide the Contracting Authority with a request for design change or additional work in sufficient detail for review by Canada.
 - (b) The Contracting Authority will forward the request to the Technical Authority for review.
 - (c) If Canada agrees that a design change or additional work is required, then the procedures detailed in paragraph 1 are to be followed.
 - (d) The Contracting Authority will inform the Contractor in writing if Canada determines that the design change or additional work is not required.
3. The Contractor must not proceed with any design change or additional work without the written authorization of the Contracting Authority. Any work performed without the Contracting Authority's written authorization will be considered outside the scope of the Contract and no payment will be made for such work.

7.27 NOT USED
7.28 NOT USED
7.29 NOT USED

7.30 Vessel UnManned Refits

A0032C (2011-05-06) Vessel Unanned Refits

7.31 Pre-Refit Meeting

A Pre-Refit meeting will be convened and chaired by the Contracting Authority at the Repair facility the first working day of the work period.

7.32 Progress Meetings

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

and Quality Assurance Manager. Progress meetings will generally incorporate technical meetings to be chaired by the Technical Authority.

7.33 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 upon 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 (1) copy to the Technical Authority;
 - (c) one (1) copy to the Contractor.

7.34 Licensing

The Contractor must obtain and maintain all permits, licenses and certificates of approval required for the Work to be performed under any applicable federal, provincial or municipal legislation. The Contractor is responsible for any charges imposed by such legislation or regulations. Upon request, the Contractor must provide a copy of any such permit, license or certificate to Canada.

7.35 Hazardous Waste - Vessels

SACC Manual Clause A0290C (2008-05-12) Hazardous Waste - Vessels

7.36 Not Used

7.37 Scrap and Waste Material

SACC Manual Clause A9055C (2010-08-16) Scrap and Waste Material

7.38 Workers Compensation

SACC Manual Clause A0285C (2007-05-25) Workers Compensation

Solicitation No. - N° de l'invitation
F5561-151049/a
Client Ref. No. - N° de réf. du client
F5561-151049

Amd. No. - N° de la modif.
File No. - N° du dossier

Buyer ID - Id de l'acheteur
HAL403
CCC No./N° CCC - FMS No./N° VME

ANNEX A STATEMENT OF WORK

The entire Statement of Work is incorporated into and forms part of this document. It is attached hereto as a separate electronic document entitled:

**CCGS HUDSON
SPECIFICATION NO. 16-H-011-14-2**

**ANNEX B
BASIS OF PAYMENT**

THE FOLLOWING WILL BE COMPLETED BY PWGSC PRIOR TO CONTRACT AWARD AND WILL FORM THE BASIS OF PAYMENT FOR THE RESULTING CONTRACT AS PER PART 7, CLAUSE 6.1.

B1 Contract Price

Firm Price for Known Work \$ _____

For completion of work specified as per Annex A and detailed in Appendix 1 to Annex I

HST \$ _____

Total Contact Price \$ _____

Firm Hourly Charge-out Labour Rate \$ _____

B2 Unscheduled Work

Unscheduled work arising, as authorized by the Minister, will be calculated in the following manner:

Number of hours (to be negotiated) multiplied by your firm hourly *Charge-out Labour Rate* which includes *Overhead* and profit, plus net laid-down cost of materials to which will be added a 10% mark-up, plus Goods and Services Tax or Harmonized Sales Tax as applicable, of the total cost of material and labour. The firm hourly *Charge-out Labour Rate* and the material mark-up will remain firm for the duration of the Contract and any subsequent amendments.

B2.1 Notwithstanding definitions or usage elsewhere in this document, or in the Bidders Cost Management System, when negotiating *Hours* for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package. Elements of *Related Labour Costs* identified in I2.2 will not be negotiated, but will be compensated for in accordance with I2.2. It is therefore incumbent upon the Bidder to enter values in the above table which will result in fair compensation, regardless of the structure of their Cost Management System.

B2.2: Allowance for *Related Labour Costs* such as: Management, Direct Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Inspecting and Reporting, and Estimating will be included as *Overhead* for the purposes of determining the *Charge-out Labour Rate*.

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

B3 Overtime

No overtime work will be compensated for under the Contract unless authorized in advance and in writing by the Contracting Authority. Any request for payment must be accompanied by a copy

Solicitation No. - N° de l'invitation
F5561-151049/a
Client Ref. No. - N° de réf. du client
F5561-151049

Amd. No. - N° de la modif.
File No. - N° du dossier

Buyer ID - Id de l'acheteur
HAL403
CCC No./N° CCC - FMS No./N° VME

of the overtime authorization and a report containing such details as Canada may require with respect to the overtime work performed. Compensation for authorized overtime will be calculated by taking the average hourly direct labour rate premiums, plus certified fringe benefit additives, plus profit of 7 1/2 percent on labour premium and fringe benefits. These rates will remain firm for the duration of the Contract including all amendments and are subject to audit if deemed necessary by Canada.

ANNEX C INSURANCE REQUIREMENTS

C1 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 Canadian Coast Guard 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 endeavor to provide the Contracting Authority thirty (30) days written notice of cancellation.
 - (d) Contractual Liability: The policy must, on a blanket basis or by specific reference to the contract, extend to assumed liabilities with respect to contractual provisions.
 - (e) Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

C2 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 \$2,000,000 per accident or occurrence and in the annual aggregate.
2. The Commercial General Liability Insurance policy must include the following:
 - (a) Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.
 - (b) Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.
 - (c) Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.
 - (d) Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
 - (e) Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
 - (f) Employees and, if applicable, Volunteers must be included as Additional Insured.
 - (g) Employers' Liability (or confirmation that all employees are covered by Worker's compensation (WSIB) or similar program)
 - (h) Notice of Cancellation: The Insurer will endeavor to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
 - (i) If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
 - (j) Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.
 - (k) Sudden and Accidental Pollution Liability (minimum 120 hours): To protect the Contractor for liabilities arising from damages caused by accidental pollution incidents.

(Derived from - Provenant de: G2001C, 2008-05-12)

C3. Limitation of Liability

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 \$10,000,000.00 per incident or occurrence, to an annual aggregate of \$20,000,000 for damages caused in any one year of carrying out of the Contract, each such year starting on the date of coming into force of the Contract or its anniversary, and to a total maximum liability of \$40,000,000.00. This limitation of the Contractor's liability does not apply to:
 - (a) any infringement of intellectual property rights; or
 - (b) any breach of warranty obligations.
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.

Solicitation No. - N° de l'invitation
F5561-151049/a
Client Ref. No. - N° de réf. du client
F5561-151049

Amd. No. - N° de la modif.
File No. - N° du dossier

Buyer ID - Id de l'acheteur
HAL403
CCC No./N° CCC - FMS No./N° VME

ANNEX D
Consent to a Criminal Record Verification (PWGSC-TPSGC 229)

Available as an attachment via BuyandSell

ANNEX E

WARRANTY

D1 2030 (2013-06-27) General Conditions - Goods (Higher Complexity), are hereby amended as follows:

Delete Section 2030 (22) (2013-06-27) Warranty, and Insert the following:

1. At the discretion of the Minister, the Contractor will replace or make good at its own expense any finished work, excluding Government Issue incorporated therein, which becomes defective or which fails to conform to contract requirements as a result of faulty or inefficient manufacture, material or workmanship.
2. Notwithstanding prior acceptance of the finished work, and without restricting any other term of the Contract or any condition, warranty or provision implied or imposed by law, the Contractor hereby warrants that the following are free from all defects and conform with the requirements of the contract:
 - a. The painting of the underwater portion of the hull for a period of three hundred sixty five (365) days commencing from the date of undocking, except that the Contractor will only be liable to repair and/or replace to a value to be determined as follows:
Original cost to Canada of the underwater painting Work, divided by three hundred sixty five (365) days and multiplied by the number of days remaining in the warranty period. The resultant would represent the "Dollar Credit" due to Canada from the Contractor.

All other painting Work for a period of three hundred sixty five (365) days commencing from the date of acceptance of the Work;
 - b. All parts and materials supplied for the Work for a period of three hundred and sixty five (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 must extend for a period of ninety (90) days from the date of acceptance of the vessel;
 - ii. for all outstanding defects, deviations, and Work items listed on the Acceptance Document at Delivery, the Warranty will be ninety (90) days from the subsequent date of acceptance for each item.
3. The Contractor agrees to pass to Canada, and exercise on behalf of Canada, all warranties on the Materials and/or labour supplied or held by the Contractor which exceed the periods indicated above.

D2 Warranty Procedures

1. **Scope**
 - a. The following are the procedures which suit the particular requirements for warranty considerations for a vessel on completion of a refit.
2. **Definition**
 - a. There are a number of definitions of warranty most of which are intended to describe its force and effect in law. One such definition is offered as follows:
A warranty is an agreement whereby the vendors or manufacturers responsibility for performance of its product is extended for a specific period of time beyond the date at which the title to the product passes to the buyer.
3. **Warranty Conditions**
 - a. General Conditions 2030 General Conditions - Goods (Higher Complexity) are augmented by clauses incorporated into the subject Contract.
 - b. The warranty periods may be stated in more than one part:
 - i. 90 days commencing from the day the PWGSC 1205 Acceptance Document is signed for workmanship provided by the contractor for the refit work specified;

- ii. 365 days from the date of acceptance for the specified areas of painting;
- iii. 365 days commencing from the day the PWGSC 1205 Acceptance Document is signed for parts and material provided by the contractor for the refit work specified;
- iv. Any other specific warranty periods that may be required in the contract or offered by the Contractor.
- c. The foregoing does not cover the disposition of other deficiencies that will be directly related to Technical Authority problem areas of the following nature:
 - i. items becoming unserviceable that were not included in the refit specification;
 - ii. refit specifications or other related documentation requiring amendments or corrections to increase viability; and
 - iii. work performed that is directly related to the Technical Authority.

4. Reporting Failures With Warranty Potential

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

5. Procedures

- a. Immediately it becomes known to the Ship's Staff that an equipment/system is performing below accepted standards or has become defective, the procedures for the investigation and reporting are as follows:
 - i. The vessel advises the Technical Authority when a defect, which is considered to be directly associated with the refit work, has occurred.
 - ii. On review of the Specification and the Acceptance Document, the Technical Authority in consort with Ship's Staff is to complete the Tombstone Data and section 1 of the Warranty Claim Form Appendix 1 to Annex E and forward the original to the Contractor for review with a copy to the PWGSC Contracting Authority. If the PWGSC Contracting or Inspection Authority is unable to support warranty action, the Defect Claim Form will be returned to the originator with a brief justification. (It is to be noted that in the latter instance PWGSC will inform the Contractor of its decision and no further action will be required of the Contractor.
Warranty defect claims may be forwarded in hard copy, by fax or by e-mail whichever format is the most convenient.
 - iii. Assuming the Contractor accepts full responsibility for repair, the Contractor completes Section 2 and 3 of the Warranty Claim Form, returns it to the Inspection Authority who confirms corrective action has been completed, and who then distributes the form to the Technical Authority and the PWGSC Contracting Authority.
- b. In the event that the Contractor disputes the claim as a warranty defect, or agrees to share, the contractor is to complete Part 2 of the Warranty Claim Form with the appropriate information and forward it to the Contracting Authority who will distribute copies as necessary.
- c. When a warranty defect claim is disputed by the Contractor, the Technical Authority may arrange to correct the defect by in-house resources or by contracting the work out. All associated costs must be tracked and recorded as a possible charge against the contractor by PWGSC action. Material costs and manhours expended in correcting the defect are to be recorded and entered in Section 5 of the warranty defect claim by the Technical Authority who will forward the warranty defect claim to the PWGSC Contracting Authority for action. Defective parts of equipment are to be retained pending settlement of claim.
- d. Defective equipment associated with potential warranty should not normally be dismantled until the contractors 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.

6. Liability

- a. Agreement between the Contracting Authority, Inspection Authority, Technical Authority and the Contractor will result in one of the following conditions:
 - i. The contractor accepts full responsibility for costs to repair or overhaul under the warranty provisions of the contract;

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

7. Alongside Period For Warranty Repairs and Checks

- a. If at all possible, an alongside period for the vessel is to be arranged just before the expiration of the 90 day warranty period. This alongside period is to provide time for warranty repair and check by the contractor.
- b. In respect to the underwater paint, should it become defective during the associated warranty period the contractor is only liable to repair to a value determined as follows:
Original cost to Canada for painting and preservation of the underwater section of the hull, divided by three hundred sixty five (365) days and multiplied by the number of days remaining in the period. The resultant would represent the Dollar Credit due to Canada from the Contractor.
- c. The Underwater paint system, before expiration of the warranty, should be checked by divers. The Technical Authority, is to arrange the inspection and inform the Contracting Authority of any adverse results.

APPENDIX 1 to ANNEX D



Public Works and Government Services Canada

Travaux publics et Services gouvernementaux
Canada

Warranty Claim Rclamation De Garantie

| | | |
|-------------------------------------|---|-----------------------------|
| Vessel Name Nom de navire | File No. N de dossier | Contract No. - N de contrat |
| Customer Department Ministre client | Warranty Claim Serial No. Numro de srie de rclamation de garantie | |
| Contractor Entrepreneur | Effect on Vessel Operations Effet sur des oprations de navire Critical Degraded Operational Non-operational | |

1. Description of Complaint Description de plainte

Contact Information l'information de contact

_____ Name Nom Tel. No. - N TI

_____ Signature Signature Date

2. Contractors Investigative Report Le rapport investigateur de l'entrepreneur

3. Contractors Corrective Action La modalit de reprise de l'entrepreneur

_____ Contractors Name and Signature Nom et signature de l'entrepreneur Date of Corrective Action - Date de modalit de reprise

_____ Client Name and Signature - Nom et signature de client Date

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

_____ Signature Signature

_____ Date

5. Additional Information Renseignements supplmentaires

Solicitation No. - N° de l'invitation
F5561-151049/a
Client Ref. No. - N° de réf. du client
F5561-151049

Amd. No. - N° de la modif.
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Buyer ID - Id de l'acheteur
HAL403
CCC No./N° CCC - FMS No./N° VME

ANNEX F
NOT USED

ANNEX G
Not used

ANNEX H
Not Used

ANNEX I

FINANCIAL BID PRESENTATION SHEET

I.1 Evaluation of Price

The price of the bid will be evaluated in Canadian dollars, the Goods and Services Tax or the Harmonized Sales Tax excluded.

| | | |
|-----------|--|----------|
| a) | Known Work For work as stated in Annex A and detailed in the attached Pricing Data Sheet Annex I, Appendix 1 a FIRM PRICE of: | \$ _____ |
| b) | Unscheduled Work Estimated labour hours at a firm Charge-out Labour Rate, including overhead and profit: 2000 person hours X \$_____ per hour for a PRICE of: Hours in excess of 2000 will also be charged at this rate. Bidders are to include any premiums / surcharges or fees that are applicable to the hourly rate. | \$ _____ |
| c) | EVALUATION PRICE HST or GST Excluded, [a + b]: <div style="text-align: right;">For an EVALUATION TOTAL of :</div> | \$ _____ |

I.2 Unscheduled Work

Unscheduled work arising, as authorized by the Minister, will be calculated in the following manner:

"Number of hours (to be negotiated) X your firm hourly Charge-out Labour Rate which includes Overhead and profit, plus net laid-down cost of materials to which will be added a 10% mark-up, plus Goods and Services Tax or Harmonized Sales Tax as applicable, of the total cost of material and labour. The firm hourly Charge-out Labour Rate and the material mark-up will remain firm for the duration of the Contract and any subsequent amendments."

I.2.1 Notwithstanding definitions or usage elsewhere in this document, or in the Bidders 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 I.2.2 will not be negotiated, but will be compensated for in accordance with I.2.2 It is therefore incumbent upon the Bidder to enter values in the above table which will result in fair compensation, regardless of the structure of their Cost Management System.

I.2.2 Allowance for Related Labour Costs such as: Management, Direct Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Inspecting and

Reporting, and Estimating will be included as Overhead for the purposes of determining the Charge-out Labour Rate entered in Table I.1 above.

- I.2.3** The 10% mark-up rate for materials will also apply to subcontracted costs. The mark-up rate includes any allowance for material and subcontract management not allowed for in the Chargeout Labour Rate. A separate labour component for the purchase and handling of materials or subcontract administration is not allowable.

I.3 Overtime Fees

Compensation for authorized overtime will be calculated in the following manner:

- a. For Known Work, the contract price plus agreed overtime hours paid at the following premium rates; or,
- b. For Unscheduled Work, agreed overtime hours at the quoted *Charge-out Labour Rate* plus the following premium rates:

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

For Double time \$ _____ per hour

Solicitation No. - N° de l'invitation
F5561-151049/a
Client Ref. No. - N° de réf. du client
F5561-151049

Amd. No. - N° de la modif.
File No. - N° du dossier

Buyer ID - Id de l'acheteur
HAL403
CCC No./N° CCC - FMS No./N° VME

Appendix 1 to Annex H Detailed Pricing Data Sheet

Pricing Data sheet will be provided in a separate electronic document with the Bidders Conference conference minutes.

ANNEX j REQUIRED CERTIFICATIONS

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 Human Resources and Skills Development Canada (HRSDC) - 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 j 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 j Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

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 such request by Canada will also render the bid non-responsive or will constitute a default under the Contract.

For further information on the Federal Contractors Program for Employment Equity visit HRSDC-Labour's [website](#).

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 HRSDC-Labour.
- OR**
- A5.2. The Bidder certifies having submitted the Agreement to Implement Employment Equity (LAB1168) to HRSDC-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 HRSDC-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 K
INFORMATION REQUIRED FOR CODE OF CONDUCT CERTIFICATION**

Please provide list of names of the following entities, according to the ownership nature of the company

1. For a Corporation - each current member of the Bidder's Board of Directors;

2. For a Partnership, General Partnership or Limited Partnership - the names of all current partners;

3. For a Sole Proprietorship or an individual doing business under a firm name - the name of the sole proprietor or individual;

4. For a Joint Venture - the names of all current members of the Joint venture;

5. For an individual - the full name of the person



Canadian
Coast Guard

Garde côtière
canadienne

CANADIAN COAST GUARD ATLANTIC REGION

CCGS G PEDDLE SC



DRY DOCKING AND REFIT SPECIFICATION

**SPECIFICATION NO.: 15-G028-012-1
REVISION 0**

REQUISITION NUMBER: F5561-151049

February 8 – March 7, 2016

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

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DRYDOCKING & REFIT 2015**

TABLE OF CONTENTS

| | |
|---|-----|
| GENERAL NOTES | 4 |
| 1 - SERVICES | 11 |
| 2 – PRODUCTION CHART & SUBCONTRACTORS ALLOWANCES | 16 |
| HD-01 DRYDOCKING | 19 |
| HD-02 HULL INSPECTION & WELDING (SURVEY) | 22 |
| HD-03 ANODES | 28 |
| HD-04 STORM VALVES & SEA CONNECTIONS INSPECTION (SURVEY)..... | 31 |
| HD-05 PROPELLER SHAFT SEALS AND SHAFT CLEARANCES (SURVEY) | 35 |
| HD-06 HULL CLEANING AND PAINTING..... | 38 |
| HD-07 SEA CHESTS AND STRAINERS (SURVEY)..... | 44 |
| HD-08 ENGINE ROOM LIMBER HOLES | 47 |
| H-01 LIFERAFTS ANNUAL INSPECTION | 49 |
| H-02 FUEL TANK VENT MODIFICATIONS (SURVEY) | 52 |
| H-03 FIXED FIRE FIGHTING SYSTEMS | 59 |
| H-04 FIRE DETECTION SYSTEM INSPECTION..... | 62 |
| H-05 PORTABLE FIRE EXTINGUISHERS..... | 64 |
| H-06 ANNUAL DUCT CLEANING | 68 |
| H-07 ANNUAL LIFEBOAT DAVIT INSPECTION (SURVEY)..... | 72 |
| L-01 MULTI CABLE WIRE TRANSIT | 76 |
| L-02 ANNUAL MEGGAR READINGS | 84 |
| APPENDIX A | 87 |
| APPENDIX B | 101 |
| APPENDIX C | 104 |
| APPENDIX D | 108 |

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

GENERAL NOTES

1. **ON-SITE PROJECT OFFICER:** All the specified work, as well as all work arisings, shall be completed to the satisfaction of the **Coast Guard Technical Authority (CGTA)** who, unless otherwise advised, shall be the **Chief Engineer** of the ship, or their designated representative. Upon completion of each item of the specification, the CGTA shall be notified so that he/she may inspect the work prior to the complete closing up of any work. Failure to give notification does not absolve Contractor of the responsibility of providing CGTA the opportunity to inspect any item. Inspection of any item by the CGTA does not substitute for any required inspection by Transport Canada Marine Safety and Security (TCMSS), Public Works and Government Services Canada (PWGSC) or Health Canada (HC).
2. **SAFETY:** Vessel shall be under Contractor's Safety Management program while under their Care & Custody. Potential Contractor's shall include with their bids the name of their Safety Manager or Supervisor who will ensure that these requirements for workplace safety are met. When under Canadian Coast Guard (CCG) Care & Custody the ISM Safety annex shall apply.
3. **SUB-CONTRACTORS:** All conditions, stipulations etc. listed in the General Notes apply to any Sub-Contractors employed by the Main Contractor to carry out work on any Specification item.
4. **SCHEDULE:** At the Pre-Refit Meeting, the successful Contractor shall provide a Production Bar Chart or Schedule showing commencement and completion dates for each item in this specification. This document shall highlight any critical dates and be capable of showing the effects of late completion date of the work package. Contractor shall provide updated Production Schedules to the CGTA, Senior Vessel Maintenance Manager and PWGSC whenever the schedule is revised.
5. **SAFE WORK CERTIFICATES:**
Before any cleaning, painting or hot work is commenced in confined spaces or machinery compartments, Contractor and subcontractor personnel issuing these certificates shall be fully trained, qualified and certified in accordance with Canada Labour Code (CLC) requirements and all relevant provincial legislation. Certificates shall clearly state the type of work permitted and shall be renewed as required by the regulations. Contractor and his sub-Contractors are advised that any work carried out in confined spaces as defined by the CLC and relevant provincial legislation shall fully comply with all provisions therein.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

GENERAL NOTES

6. **CONFINED SPACE:**

For all work requiring entering or working in confined spaces; Contractor shall note that Canadian Coast Guard ships are presently working under the ISM CODE and that each ship has a FLEET SAFETY MANUAL onboard. This manual is also available in soft copy and can be distributed upon request. As a minimum, Contractor shall comply with the WORK REQUIREMENTS as outlined in the FLEET SAFETY MANUAL during the contracted work period. In accordance with the CCG Fleet Safety and Security manual, all work involving the entering of confined spaces shall make use of a qualified rescue team. This team shall be used at all times when tanks or confined spaces are to be entered. The costs associated with all known work requiring the services of a confined space rescue team shall be the responsibility of Contractor.

7. **WELDING:** All welding work shall be performed in accordance with all of the requirements of the Canadian Coast Guard Welding Specification CT-043-EQ-EG-001, March 2014.

7.1 **CONTRACTOR REQUIREMENTS**

7.1.1. **Steel Structures**

All welding contractors shall be certified by the CWB to CSA Standard W47.1 Division 1 or 2 for new construction and work packages other than new construction.

7.1.2. **Aluminum Structures**

All welding contractors shall be certified by the CWB to CSA Standard W47.2 Division 1 or 2 for new construction and work packages other than new construction.

7.1.3. **Welding Procedures**

All welding procedure specifications and/or welding procedure data sheets shall be reviewed and approved by the CWB prior to use.

7.1.4. **Welding Personnel**

All welding personnel shall be approved by the CWB prior to their commencing any welding work.

7.1.5. **Performance and Qualification Testing**

All performance and procedure qualification testing shall be fully witnessed and documented by the CWB.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

GENERAL NOTES

7.1.6. **Limitations Prior to Commencing Welding Work**

All Contractors shall submit their welding personnel qualification records and approved welding procedures to the Delegated Representative prior to commencing any welding work.

All welding procedures, including welding procedure specifications and welding procedure data sheets, shall include an indication of acceptance by Contractor (by signature, seal or other appropriate means) and a stamp of acceptance by the CWB.

7.1.7. **Governing Standards for Welding**

For structural steels > 3 mm in thickness, welding shall meet the requirements of CSA Standards W47.1 and W59, except as modified by the Canadian Coast Guard Welding Specification CT-043-EQ-EG-001, March 2014.

For structural aluminum > 3 mm in thickness, welding shall meet the requirements of CSA Standards W47.2 and W59.2, except as modified by the Canadian Coast Guard Welding Specification CT-043-EQ-EG-001, March 2014.

7.2 **INSPECTION OF WELDS**

The methods of inspection, extent, acceptance criterion and inspection personnel qualifications shall be in accordance with all of the requirements of the Canadian Coast Guard Welding Specification CT-043-EQ-EG-001, March 2014.

8. **HOTWORK VENTILATION AND CONTAINMENT:** During all known work and work arisings, that involve hotwork, Contractor shall ensure that all dust, debris, gas and smoke generated by the work is evacuated from the vessel by the most direct method.

Each item that involves hotwork shall have a defined zone which shall be kept sealed off from the rest of the vessel during the complete work period that involves the generation of welding gases, smoke, and grinding dust etc. These zones shall be indicated in the items contained within the known work package. All extra work arisings that involve hotwork shall have a zone determined using the same logic. The zone shall be limited to the space(s) where the hotwork is being done, boundary areas where fire watches are required, and the access routes between the zone and the exterior of the vessel for workers, welding and cutting equipment and ventilation ductwork.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

GENERAL NOTES

In areas where accommodations and or workplaces cannot be completely isolated from personal access a double sealed door (air lock) arrangement shall be erected to minimize ingress of the contaminants into occupied areas. A ventilation extraction point shall be located as near as practical to the inside door on the worksite side to reduce the egress into the air lock and subsequently the accommodations and/or workspaces.

All doorways within the affected area that are not being worked or require access for fire watch activities shall be sealed off to prevent all containments from getting in. Passageway branches that connect to the zone shall be sealed off. Contractor shall completely clean all surfaces and fabrics within a compartment that are not suitably protected.

9. **ENCLOSURES AND HEATING:** Contractor shall provide all enclosures and heating required to carry out all the scheduled work, taking into account the nature of the work, the time of year the refit is, and the weather conditions for that time of year in Contractor's geographic area. Examples of where heating and enclosures could be required include but are not limited to painting, Potable Water coating, and tank cleaning.

10. **SERVICE CONDITIONS:** Unless specified otherwise, all components, materials and installations supplied by or carried out by Contractor shall be adequate to meet the following service conditions:

In areas that are exposed to the elements:

- outside air temperature of minus (-) 40⁰ C to plus (+) 35⁰ C;
- wind velocity of 50 knots;
- water temperature of minus (-) 2⁰ C to plus (+) 30⁰ C;
- shock loading of 2.5g horizontal, 1.5g vertical.

All new components, materials and installations within the ship shall be adequate to withstand the specified shock loading accelerations.

11. **HOTWORK & FIRE WATCHES:** Contractor shall abide by their Safety Management Program when performing Hot-work. Contractor shall provide sufficient suitable fire extinguishers and a fire watch during any such heating and until the work has cooled. Ship's extinguishers are **not** shall be used except in an emergency. Should Contractor have to use ship's extinguishers in an emergency they shall be recharged and re-certified by a local facility, of CCG's choice, at Contractor's cost.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

GENERAL NOTES

12. **RELOCATIONS:** Any piping, manholes, parts and/or equipment requiring temporary relocation to carry out specified work, or to gain access, shall be refitted upon completion with new jointing, anti-seize compound, clamps and brackets as applicable (Contractor supply). All equipment and systems, so disturbed, shall be tested to prove correct function and fluid integrity upon completion. Defects shall be corrected at Contractor's cost. **NOTE:** It is Contractor's responsibility to identify equipment and systems that shall be tested to verify correct function, prior shall being disturbed for required work.
13. **LIGHTING:** Temporary lighting and/or temporary ventilation required by Contractor to carry out any item of this specification shall be supplied, installed and maintained in safe working condition by Contractor and removed on completion of the related work. Naked light bulbs or tubes shall not be used as temporary lighting inside the vessel. All lights used in the vessel shall be supplied with approved guards.
14. **CLEANUP:** Contractor to ensure that all spaces, compartments, and areas where work has been carried out, or Shipyard staff has used for transit routes, are left in "**as clean a condition as found**" when the vessel commenced refit. All rags, debris, and associated garbage generated by the shipyard staff while on board shall be removed to the garbage container(s) each day. The costs associated with the removal of dirt, debris, and garbage shall be included in the quote.
15. **INSPECTION:** Contractor shall be responsible for calling in the services of TCMSS, PWGSC and HC Inspectors when and as required for survey and inspection items. All TCMSS surveyors called in by Contractor shall sign-off the CGTA's Inspection Log Book for all items surveyed.
16. **CORRESPONSANCE & REPORTS:** Unless otherwise agreed upon, all type written correspondence, reports, certificates and drawings presented to the CGTA shall be in English. All reports shall be computer generated and provided in **English**. Additional copies may be submitted in French.

All reports shall be completed in a timely manner and provided to the CGTA immediately following their completion, and shall continue as required throughout each specification item.

Upon delivery of the vessel, a compilation of all reports, drawings and correspondence shall be provided on a CD or DVD to CGTA

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

GENERAL NOTES

17. **PAINTING**: Unless specified otherwise, replacement and/or disturbed steelwork shall be given a minimum of two (2) coats of Intershield 300 bronze Epoxy; each coat shall be of contrasting colour. **Lead-based paints shall not be used.** Prior to painting, all new and disturbed steelwork shall be power tool cleaned as a minimum standard of surface preparation. Contractor shall notify the CGTA after the first coat of paint is fully cured so that it may be inspected prior to the application of the second coat. Failure to do so shall result in another coat being applied at Contractor's expense.
18. **MATERIALS & TOOLS**: All materials, unless otherwise specified, shall be supplied by Contractor. Contractor to supply all necessary tools and equipment to perform the specified work. Also referred to as Contractor Furnished Material (CFM). Special, ship-specific tools, as required, will be issued by and returned to CGTA. Contractor shall be responsible for removing the tools from their stored location aboard the vessel, and returning them and securing them in place when finished. Otherwise, ship's tools and equipment will not be available for Contractor's use.
19. **MEASUREMENTS**: All dimensional measurements shall be taken and recorded in inches. Unless otherwise specified, the dimensions shall be taken and reported in thousandths of an inch (0.000 inch). All measuring devices shall be described on the submitted reporting sheets. All reported dimensions shall be either typed or printed in a neat legible manner, and shall include the name of the person who took the readings.
20. **CO-OPERATION**: During the period that the ship is in refit, members of the ship's complement, Coast Guard technical staff, and service specialists may be carrying out repairs to, maintenance of, or modifications of various ships' equipment not covered in this specification. Contractor shall not deny access to the vessel to these persons. Every effort will be taken to ensure that this Coast Guard controlled work will not interfere or conflict with that being carried out by Contractor.
21. **SMOKING**: The Public Service Smoking Policy forbids smoking in Government ships in all areas inside the ship where shipyard personnel will be working. Contractor shall inform workers of this policy and ensure that it is complied with in all cases.
22. **ACCESS**: The following areas are out of bounds to Contractor's personnel except to perform work as required by the specifications: all cabins, offices, workshops, Wheelhouse, Control Room, public washrooms, Officers' and Crew's Messes and Lounges. Contractor shall ensure that no workers bring meals onboard the ship.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

GENERAL NOTES

23. **INSPECTION & GUIDANCE**: During this contract, Ship's Crew and Regional Staff will be onboard conducting inspections and providing guidance to Contractor personnel.
24. **ASBESTOS**: There are no locations having asbestos containing materials (ACM).

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

1 - SERVICES

GENERAL: The following services shall be supplied, fitted and/or connected upon arrival at Contractor's facility, maintained throughout the docking / contract period, and removed from the vessel on completion of the work. Contractor shall be responsible for any additional connections required when ship is moved between dock/slipway and alongside berth at Contractor's premises.

MANNED REFIT: During the contract period, the CCGS G Peddle SC shall be manned. As a result, the ship shall remain in the care and custody of the Canadian Coast Guard. Every effort shall be taken to ensure that the vessel's crew shall not interfere or conflict with Contractor's work.

GENERAL (MANNED): The services as described in 1 - Services shall be supplied, fitted and/or connected whenever ship's crew are living aboard the ship. This is expected to include the time period after arrival at Contractor's facility and prior to formal handover to Contractor. The services shall also be provided until signing of the acceptance document and departure of the ship from Contractor's facilities. Contractor shall be responsible for any additional disconnections and re-connections required when the ship is moved between dock / slipway and any berth at Contractor's premises.

DOCKING: Contractor shall be responsible to coordinate a safe transfer of the ship between its pre/post-docking berth and its docking blocks. During docking and undocking of the ship, radio contact shall be maintained between the vessel's Commanding Officer and Contractor's Docking Officer.

PRICES: Contractor shall quote a global price and daily or unit cost rates for all services supplied to the vessel during the refit period.

GANGWAYS: Contractor shall supply and install two (2) gangways complete with safety net, while the ship is on the dock or slipway or at berth. Gangways, complete with safety nets, one of the two gangways shall be installed in such a manner that they provide separate routes for escape in the event of fire. CGTA shall advise of specific locations.

Safety nets shall be in compliance with the Canada Labour Code. Gangways shall be safe, well-lit and structurally suitable for the passage of shipyard personnel and the ship's crew. Contractor shall maintain gangways in a safe condition throughout the duration of the refit while the ship is out of the water.

Initial installation and later removal of gangways shall be included in quote, as well as maintenance and upkeep while vessel is in Contractor's yard. Any movement of gangway(s) required by Contractor shall be at his cost.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

1 - SERVICES

ELECTRIC POWER: Contractor shall connect and quote on supplying electrical power at 600 Volt Alternating Current, 3 Phase, 4 wire with floating neutral, 60 Hz at 200 Ampere rating upon ship's arrival at Contractor's facilities.

Contractor shall bid on the supply of 3000 kWh per day for refit period. The actual consumption shall be pro-rated up or down as per power used as indicated by vessel's kWh meter. The power meter shall be read and recorded by CGTA and Contractor's Representative together at the start and end of contracted period. The kWh unit price shall be quoted for PWGSC 1379 adjustment purposes. Cost of connection and disconnection shall be included in the quote.

If no kW consumption meter is available, a daily consumption (amps) shall be negotiated and power requirement determined by the following formula:

$$\mathbf{KWH = I \times E \times P.F. \times 1.73 \times 24/1000.}$$

A ground cable shall be attached to the ship's hull. Contractor shall ensure compliance as per the Transport Canada Marine Safety Bulletin – “Grounding Safety in Dry dock”.

Note: Problems have been experienced in the past with the loss of one phase with Contractor supplied shore power, due to a fuse blowing. Contractor shall ensure the electrical service provided has protection system fitted such that loss of a single phase at Contractor's end of the cable results in immediate opening of the remaining phases.

FIRE MAIN: Contractor shall connect a one and a half (1 ½) inch diameter fresh water line to the ship's fire main, with an isolation valve placed onboard. **Fire main shall be charged and maintained at 100 psig.**

POTABLE & SANITARY WATER: Contractor shall supply Two (2) Portable toilets, they shall be placed forward of the wheelhouse for duration of contract and emptied weekly. Potable fresh and sanitary water at 415 kPa (60 PSI) constant pressure shall be connected to ship's systems, complete with pressure regulator and shut-off valves. Approximately 10 cubic meters shall be supplied for duration of the contract. Contractor shall supply and connected a water meter to the ship's inlet line. Contractor shall quote a unit rate for PWGSC 1379 adjustments, and include all connection / disconnection costs in bid price. Contractor shall make arrangements to prevent the potable water supply piping/hoses are protected against freezing. Contractor shall provide to CGTA at the Pre-Refit Meeting a certificate of potable water quality before water service is connected to the vessel.

This potable water supply shall be connected to a one and a half (1 ½) inch camlock on the Foredeck.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

1 - SERVICES

HULL DISCHARGE CONNECTIONS:

Connections shall be made to the following and directed to suitable drains:

- Sewage Treatment Tank Overboard Contractor to include the cost of disposal for 10 cubic meters per day and provide a unit cost per cubic meter for adjustment purposes.
- Drain connection to the Port main engine exhaust for refrigeration drain.

These connections shall be maintained for the duration of the vessel's docking period. Arrangements shall be made to prevent the freeze up of these drains. Contractor s shall include the cost of all connections and disconnections in their quotations, and quote a daily rate for PWGSC 1379 adjustment purposes.

GARBAGE: A garbage container, 6 m3 (215 Ft.3) minimum capacity, strictly for ship's use shall be placed in a convenient location as close as possible to the ship's gangway. Contractor shall provide this service for the duration of the refit. The bin shall be empty on a regular base to negate the problems of odors.

CRANAGE: Contractor shall bid on supplying general services of a dockside crane, driver and rigger for twenty (15) hours during the dry-docking period as and when required by the CGTA, plus an hourly rate for PWGSC 1379 adjustment purposes.

WASTE OIL: Contractor shall bid on removal and disposal of 5,000 liters of waste oil / water mixture from the vessel during the refit period, and quote a unit rate for PWGSC 1379 adjustment purposes. Removal and disposal shall be performed by an identified licensed waste oil disposal company in full compliance with regulatory requirements.

Copies of all dirty water and oily water removal invoices with quantities shall be given to the CGTA. Copies of invoices detailing disposal of the liquids shall be given to the CGTA.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

1 - SERVICES

CLEANING: Contractor shall ensure that all spaces, compartments and areas of the ship where work has been carried out, or Shipyard staff has used for transit routes, are “as clean as found” when work is completed. The cost of clean-up work shall be included in the quote for each specification item.

PARKING: Sufficient parking for DFO/CCG and PWGSC representatives shall be provided conveniently close to the berthed or docked vessel. Contractor shall provide five (5) clearly designated for “DFO/CCG and PWGSC use only” parking spaces for the duration of the docking period.

TELEPHONES: Two (2) private telephone lines shall be provided to the vessel on arrival at Contractor’s facilities, and shall be maintained for the refit's duration. Both telephone lines shall be direct lines to the vessel’s telephone system. All telephones shall be active 24 hours a day for the duration of the contract. Contractor shall be responsible for giving notice for connection/disconnection times to the Telephone Company as required for any ship movements during the contract period.

Contractor shall supply a listing of shipyard contacts, fire, police and emergency telephone numbers to CGTA when vessel arrives at Contractor's facilities. Contractor shall ensure that the CGTA is notified of any “on call personnel” and their contacts during non-working hours and days.

Long distance charges shall be billed directly to:

Fisheries and Oceans Canada
Canadian Coast Guard – Accounts Payable
Coast Guard Maritimes Regional Headquarters Building
50 Discovery Drive
Dartmouth, Nova Scotia
B2Y 3Z8
Attn: Diane McNair

INTERNET:

Contractor shall supply two dedicated hard wired high speed internet supplies and wireless access to the vessel.

Internet charges shall be billed directly to:

Fisheries and Oceans Canada
Canadian Coast Guard – Accounts Payable
Coast Guard Maritimes Regional Headquarters Building
50 Discovery Drive
Dartmouth, Nova Scotia
B2Y 3Z8
Attn: Diane McNair

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

1 - SERVICES

ALLEYWAY AND BULKHEAD PROTECTION: Alleyways and area that shall be used by Contractor's personnel on a regular basis for access to required work areas shall be suitably protected from damage, soil, etc. All affected alleyways shall have deck surfaces covered by ¼ inch Masonite extending to the full extremities of the areas dealt with. All seams, butts, and edges of the applied Masonite shall be taped to discourage ingress of soil beneath, as well as to stop any migration of the applied sections. Contractor shall quote on supplying and installing 150 square meters of 6 mm Masonite rough one side and installed rough side up. Upon completion of refit, Contractor shall lift all Masonite. The area shall be swept and mopped on completion of the refit and any tape residue shall be removed. Contractor to quote separately a price per square foot for cost of supply, installation and removal of any additional Masonite as may be required.

All internal bulkhead panels in the above-noted areas shall be suitably protected with application of 1/8 inch Masonite panels (or heavy construction paper) extending to a minimum 1.5 m height above the deck level and all corners shall be covered and taped. Again, all butts, seams and edges shall be taped. Contractor shall quote on supplying and installing 100 square meters of 3 mm Masonite (or heavy construction paper). Upon completion of refit Contractor shall remove all Masonite/paper and dispose. The areas shall be wiped clean on completion of the refit and any tape residue shall be removed. Contractor to quote separately a price per square foot for cost of supply, installation and removal of any Masonite/paper that may be required. Total cost shall be adjusted up or down by PWGSC 1379 action

SCAFFOLDING: Contractor shall supply the necessary manpower and equipment to erect, as necessary, scaffolding and staging to facilitate the inspection of the ship's hull as necessary by TCMSS Surveyor and Ship's personnel. This will include scaffolding and equipment to access propellers, rudder, thruster and renewal of anodes. The scaffolding shall be removed when the work is complete, at Contractor's expense.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

2 – PRODUCTION CHART & SUBCONTRACTORS ALLOWANCES

1: SCOPE:

The intent of this specification shall be to provide a means for tracking the overall progress of the refit.

2: TECHNICAL DESCRIPTION:

2.1 General

1. Contractor shall supply three copies of a detailed gantt chart showing the planned work schedule for the ship's refit. All copies shall be in colour as per the originals.
2. This bar chart shall show, for each specification item, the start date, the manpower loading, the duration and the completion date. The chart shall also highlight any critical paths.
3. The production chart shall be updated weekly and for each production meeting to reflect the actual production on the refit and changes to the anticipated completion dates of each individual item.
4. The production chart shall clearly indicate the arrival/departure dates of any Subcontractors/Field Service Representatives.
5. The production chart shall include the status and production on each PWGSC 1379 arising.
6. Three copies of the production chart shall be given to the Chief Engineer the day prior to each Production Meeting. A copy shall be emailed to the Senior Vessel Maintenance Manager (SVMM), Dannie Chipman (dan.chipman@dfo-mpo.gc.ca) the day prior as well.
7. A copy of the original bar chart shall be provided via email to the PWGSC contracting Officer and SVMM before the close of business on the day of the ships arrival at the Contractors premises.
8. Contractor shall provide a weekly update of the hours billed by the subcontractors along with their hourly rates, to the CGTA, PWGSC Contracting Officer and a hardcopy for CGTA aboard the vessel.
9. The results shall be tabulated in an excel spreadsheet clearly indicating the Subcontractor, date(s), hours worked and hourly rate for the hours worked.
10. The update shall be emailed to, PWGSC Contracting Officer and SVMM the day prior to the weekly scheduled Progress Meeting.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

2 – PRODUCTION CHART & SUBCONTRACTORS ALLOWANCES

2.2 Location

1. N/A

2.3 Interferences

1. N/A

3: REFERENCES:

3.1 Guidance Drawings/Nameplate Data

1. N/A

3.2 Standards and Regulations

1. N/A

3.3 Production Chart & Subcontractors Allowances

1. N/A

3.4 Owner Furnished Equipment

1. N/A

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. N/A

4.2 Testing

1. N/A

4.3 Certification

1. N/A

5: DELIVERABLES:

5.1 Reports, Drawings, and Manuals

1. Contractor shall provide a weekly production chart and excel spreadsheet for subcontractor allowances every week on the timelines indicated.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

2 – PRODUCTION CHART & SUBCONTRACTORS ALLOWANCES

5.2 Spares

1. N/A

5.3 Training

1. N/A

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

HD-01 DRYDOCKING

1: SCOPE:

Contractor shall quote on docking and undocking the ship, allowing sufficient service days to carry out the specified work, with a reasonable time allowance for arising new work. A vessel docking plan (Dwg # AF6098-10000-14_AF Dry-Docking Plan-1_2 (Rev AF1) and AF6098-10000-14_AF Dry-Docking Plan-2_2 (Rev AF1)) onboard the vessel shall be made available to Contractor.

2: TECHNICAL DESCRIPTION:

2.1 General

1. Dry docking shall be under the direct supervision of a Certified Docking Master. Prior to docking the vessel, Contractor shall present to Canadian Coast Guard their plan to effect a safe docking. This will include, but not be limited to, an explanation of block loading, dock preparation, tide wind- tug issues, manpower arrangements and communications. Contractor shall provide reasonable notice to CCG prior to undocking the vessel and make similar presentations regarding safe undocking and for the vessel's on dock period. Vessel's crew will be present for docking and undocking.
2. Contractor shall supply the services of divers to confirm that the vessel is setting evenly on the bilge and keel blocks.
3. Contractor shall quote a unit daily service day cost on dock. This cost shall form part of the overall quote. This quote shall include any tug and/or pilotage service cost.
4. Docking shall be undertaken during the first two days of refit. If necessary, Contractor shall prepare the dock in advance of the ship's arrival and the official start date of the contract period. If premium time is required for evening shifts or weekend work to meet this objective, Contractor shall identify this and include all costs in the quotation.
5. The vessel shall not be placed in the same dock with any other ship for any part of the contract period.
6. Ship's personnel will be responsible for all line handling onboard the vessel only during the docking and undocking operations. Contractor shall supply personnel on the dock walls and ashore for all line handling.
7. Contractor shall ensure that docking blocks are clear of transducer faces and sea bay access covers.
8. The Contractor shall make sure enough room between the block, the speed log and the echo sounder.

9.

[HD-01 DRYDOCKING & REFIT](#)
[BACK TO TABLE OF CONTENTS](#)

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

HD-01 DRYDOCKING

10. Two gangways shall be supplied and set up by Contractor while the vessel is drydocked. These gangways shall be set up and rigged from the wharf onto the buoy deck, complete with safety net. Gangways shall be safe, well-lit and structurally sufficient to support passage of Contractor's workmen and ship's crew.
11. During undocking Contractor shall ensure that sufficient personnel are in attendance throughout the ship's spaces to monitor for leakage around the numerous sea connections, stern tubes, sea chests, and any other areas in communication with the underwater area of the vessel that were disturbed during dry docking, and to correct any deficiencies that may arise.
12. In addition, Contractor's bid shall include cost for one additional and separate dry docking. This quote shall include the connection and disconnection for services as outlined in 1 - Services Specification Item as well as daily unit cost. This quotation shall be included in Contractor's price and form part of the evaluated bid price.
13. Contractor shall quote a unit cost on the removal of keel blocks as well as a unit cost on the insertion of keel blocks. This quote shall be included in the overall bid.

2.2 Location

1. N/A

2.3 Interferences

1. N/A

3: REFERENCES:

3.1 Guidance Drawings/Nameplate Data

1. Vessel Docking Plan;
AF6098-10000-14_AF Dry-Docking Plan-1_2 (Rev AF1)
AF6098-10000-14_AF Dry-Docking Plan-2_2 (Rev AF1)

3.2 Standards and Regulations

1. N/A

3.3 Subcontractors Allowances

1. N/A

3.4 Owner Furnished Equipment

1. N/A

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

HD-01 DRYDOCKING

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. N/A

4.2 Testing

1. N/A

4.3 Certification

1. N/A

5: DELIVERABLES:

5.1 Reports, Drawings, and Manuals

1. N/A

5.2 Spares

1. N/A

5.3 Training

1. N/A

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

HD-02 HULL INSPECTION & WELDING (SURVEY)

1: SCOPE:

In conjunction with specification item for Drydocking, and for the Underwater Hull Cleaning and Painting, the entire hull will be given an inspection by the CGTA and attending Lloyd's Registry Surveyor (LRS).

2: TECHNICAL DESCRIPTION:

2.1 General

1. Contractor shall arrange for Lloyd's Registry Class inspection of the underwater hull area shell plating and paint system condition.
2. The underwater hull survey inspection shall be carried out in accordance with the Classification Society's survey requirements for a vessel of this type.
3. The underwater Hull Inspection shall identify areas of the hull that need to be grit blasted and recoated to the paint manufacturer's requirements. This inspection shall be completed within 48 hours of docking the vessel.
4. Contractor shall carry out all Lloyd's Registry Class prescribed repairs. Cost of repairs shall be negotiated under PWGSC 1379 action.
5. Underwater Hull Area \approx 330 m²
6. Contractor shall hydro-blast the underwater hull area of the vessel to the deep load line within 24 hours of docking. Hydro-blasting shall be done with a minimum of 5,000 PSI pressure.
7. Contractor shall remove all the sea-chest grates and clean the sea-chest. Contractor shall perform this work in conjunction with HD-06 Hull Cleaning and Painting.
8. Once clean, Contractor shall schedule the Lloyd's inspection of the underwater hull structure and condition for the earliest opportunity following vessel dry-docking but within the 48 hours of docking. Contractor shall perform this work in conjunction with HD-06 Hull Cleaning and Painting.
9. Contractor shall supply all necessary staging and man lifts for the work on this specification item, including inspection by Surveyors and CGTA.
10. During the vessel underwater hull inspection up to the deep load line all areas with poor coating adhesion or lack of coating shall be recorded on a copy of the shell expansion plan by Contractor and verified by the CGTA. These areas shall be recoated as per Paint Manufacturer specification.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

11. The inspection includes the inside of the bow thruster tunnel.
12. Contractor shall carry out all Lloyd's Surveyor prescribed repairs in accordance with all applicable standards and regulations including those identified in 3.2. Prior to commencing repair Contractor shall inform the CGTA and provide a copy of their welding procedure.
13. Contractor shall quote on 50 linear meters of welding. Actual welding services shall be adjusted through PWGSC 1379 action.
14. The bid shall include gouging and back gouging as well as the cost for six (6) x-rays of the new welds. Bid shall include all necessary staging, materials, and equipment required to perform the repairs. This work shall be carried out in conjunction with Specification Item HD-06 Hull Cleaning and Painting. The quote shall form part of the overall bid. Actual work carried out shall be adjusted up or down (credit), through PWGSC 1379 action.
15. Contractor is responsible for any cleaning in this area to prepare for hot work. Contractor is responsible for arranging for a certified Marine Chemist to visit the vessel and to carry out the necessary testing to obtain safe entry and safe for hot work certificates. A copy of a gas free/safe for hot work certificate shall be given to the CGTA prior to personnel entering the tank and a copy of each certificate shall be posted in a conspicuous location in close proximity to the manhole cover for each tank. Spaces shall be tested each day that personnel are required entry in the tanks. All precautions shall be taken to protect all areas from hot work damage. Contractor is responsible for maintaining an adequate fire watch during the course of all hot work. This shall include providing various applicable extinguishers and extinguishing mediums as necessary. This shall also include any necessary preparations and cleaning in the vicinity of the work area to obtain a gas-free permit.
16. All materials used for the prescribed repairs shall meet or exceed original specifications and shall be in compliance with applicable regulations and standards.
17. Contractor shall schedule the Lloyd's Surveyor of all prescribed repairs following their completion and prior to the coating application.
18. All new and disturbed steel resulting from the prescribed repairs shall be prepared and coated in accordance with Coating Manufacturer's Specification.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

19. Where ambient air temperatures may become a problem, Contractor shall take steps to ensure that the painting and curing of the underwater hull coating system will be completed before the completion date of the contract.
20. All existing coatings on all surfaces identified for recoating, shall be completely removed, contained and disposed of in accordance with applicable territorial and federal environmental regulations.
21. All underwater areas, not requiring grit blasting, shall be protected from damage and contamination during surface preparation and recoating. These areas include all ship side valves, port and starboard propellers, all rudder bearings and its cover, bow thruster blades, all anodes, speed log and all depth sounding appliances, etc.
22. All above water line surfaces, accommodation area, scuttles, port holes, windows, deck machinery, susceptible to damage from surface preparation and coating application overspray shall be protected accordingly.
23. Contractor is responsible for the cleanup of all blasting grit, debris and overspray from the vessel's interior and exterior decks.
24. Contractor shall ensure that all coatings are applied within the allotted dry dock time period in order to allow for the full and proper curing of the coating to the vessel's hull prior to immersion. Any application that results in an unacceptable coating to the coating Field Service Representative (FSR) and CGTA shall be redone (blasting included) at the Contractor's expense.
25. Contractor shall have the attending Lloyd's surveyor inspect the shell plating. A survey credit shall be obtained from Lloyd's for the inspection and certification of the shell plating. Contractor shall present this survey credit to the PWGSC and the CGTA prior to the flooding of the dock to re-float the vessel. Contractor shall notify the PWGSC and the CGTA so that these authorities may witness the shell plating inspection by the Lloyd's Surveyor.

2.2. Location

1. All work shall be conducted on the vessel's outer hull; if hot work is required, tank access will be required to access the interior surfaces of the hull plating.

2.3. Interferences

1. No known interferences. Contractor shall take note of the interference items during the vessel viewing and include the costs associated with dealing with these items, including removals, reinstallations and painting of disturbed metal parts. Refer to General Notes: section 12 and 17

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

3: REFERENCES:

3.1 Guidance Drawings/Nameplate Data

| Drawing Number | Description | Electronic # |
|-----------------------|--------------------------------------|---------------------|
| AF6098-10000-14 | Docking Plan 1-2 and 2-2 | |
| AF6098-10000-01_AF | Midship and Other Sections Plan | |
| AF6098-10000-03_AF | Shell Expansion | |
| AF6098-10000-04_AF | Watertight Bulkheads Plans | |
| 6098-61100-01-0 | Bottom Plugs Diagram | |
| AF6098-63100-01_AF | Paint Schedule | |
| 6098-O-63300-01 | Anodes Schedule | |
| AF6098-89940-01_AF | General Arrangement Plan 1-2 | |
| AF6098-89940-01_AF | General Arrangement Plan 2-2 | |
| AF6098-89940-02_AF | Tank Arrangement & Capacity Plan | |
| AF6098-89940-03_AF | Lines Plan | |
| AF6098-89940-08_AF | Draft Marks and Load Line Marks Plan | |

3.2 Standards and Regulations

1. The following Coast Guard Standards and or Technical Bulletins shall be adhered to in the course of executing this specification. Copies of these standards and bulletins can be obtained from the CGTA.
 - Canadian Coast Fleet Safety Manual (DFO 5737)
 - Coast Guard ISM Lock Out/Tag Out Procedures
 - Canada Shipping Act, 2001 (2001, c. 26) Hull Inspection Regulations (C.R.C., c.1432)
 - Lloyd's Register, Rules & Regulations for the Classification of Special Service Craft

2. All hotwork shall be done in accordance with CCG Welding Specification CT-043-EQ-EG-001

3. CG Fleet Circular FC 08-2007

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

3.3 Production Chart & Subcontractors Allowances

1. N/A

3.4 Owner Furnished Equipment

1. Contractor shall supply all materials, equipment and parts required to perform the specified work unless otherwise stated.

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. The Contractor shall afford the TI and TA the opportunity to witness the Lloyd's inspection of the underwater hull prior to and following all prescribed repairs.

4.2 Testing

1. Contractor shall include the cost of 10 non-destructive tests on the new welds; these tests shall be as directed by the attending Lloyd's Surveyor. Contractor shall provide a unit cost for each additional x-ray and the cost shall include travel expenses for the NDT testing company.
2. Contractor shall perform and record Wet Film Thickness readings during each application of underwater surface area coating as required by the FSR. The readings and their locations shall be contained in the final report.

4.3 Certification

1. Prior to the close of contract, certification or other documentation shall be submitted to the CGTA attesting to the quality of new materials and components such as shell plating, structural members and welding rods.

5: DELIVERABLES:

5.1 Reports, Drawings, and Manuals

1. A computer generated report shall be provided in digital format to the CGTA. This report shall include a listing of all welds performed, and locations and results of all tests performed.
2. Following the Lloyd's underwater hull inspection and prior to carrying out any identified repairs, Contractor shall submit in PDF format a copy of drawing AF6098-10000-03_AF Shell Expansion outlining in red all proposed plate repairs.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

3. For all coating applications refer to HD-06 Hull Cleaning and Painting.
4. Prior to the close of contract, two (2) copies of a comprehensive typewritten and one electronic copy of a report covering all completed work shall be submitted to the CGTA.

5.2 Spares

1. N/A

5.3 Training

1. N/A

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

HD-03 ANODES

1: SCOPE:

The intent of this specification item is for Contractor to replace all wasted and/or defective hull anodes and corrosion protection on the underwater hull of the vessel.

2: TECHNICAL DESCRIPTION:

2.1 General

Anodes

1. All sacrificial hull anodes shall be visually inspected for defects and findings recorded on a general hull plan. Recommendations for replacement shall be made accordingly.
2. Contractor shall remove all wasted and/or damaged anodes from the vessel and grind smooth all previous anode welded connections. Contractor shall fit new anodes in the same locations as the removed anodes. This shall be done after the hull coating has been applied. All weld areas shall be touched up with the hull coating after the anodes have been fitted.
3. All anodes / other protection shall be removed after completion of the coating application. Any anodes that are covered with coating shall be renewed at Contractor's expense.
4. Contractor shall quote on replacing 12 of the 20 total anodes on the vessel. Anodes shall be Aluminum Disc Anode MME 28AB and Aluminum Hull Anode MME 26AA anodes type as per drawing AF6098-O63300-01.

MME 26AA



| Weight | Dimensions | | |
|--------|------------|-------------------|-------------------|
| | Gross | Overall | Al anode |
| Nett | 2.9 kg | 405 x 150 x 33 mm | 270 x 150 x 33 mm |
| | 2.6 kg | | 40 x 5 mm |

MME 28AB



| Weight | Dimensions | |
|--------|------------|---------------|
| | Gross | Zn anode |
| Nett | 2.9 kg | Ø 230 x 25 mm |
| | 2.8 kg | Ø 50 x 3 mm |

5. A unit price per anode replacement shall be included in the pricing data sheet.
6. Sea Chest (also referred to as Sea Bay) anodes shall be renewed.
7. Contractor shall remove all wasted and/or damaged sea chest anodes.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

8. Contractor shall quote on replacing 7 of type MME26AA hull anodes include removing and installation.
9. Contractor shall quote on replacing 5 of type MME28AB disc anodes include removing and installation.
10. All anodes shall be protected from the coating material being applied in the sea chest areas during the work execution of paint process. All anode protection shall be removed after completion of the coating application. Any anodes that are covered with coating shall be renewed at Contractor's expense.
11. A unit price per anode replacement is to be included in the pricing data sheet.

Bow thruster Anodes

12. Contractor shall remove all wasted and/or damaged thruster tunnel anodes. There are 2 anodes, Aluminum MME26AA each side of the thruster unit and total is 4.

2.2 Location

1. Hull Area

2.3 Interferences

1. Refer to General Notes: section 12 and 17

3: REFERENCES:

3.1 Guidance Drawings/Nameplate data

Manual:

| NO. | Description |
|-----|--|
| 1 | Hydraulic Thruster (PKK 24 TRAC (24) 75 kw) Installation and Operation |
| 2 | 24 TRAC ASSY drawing # 29351 |

Drawings:

| Drawing Number | Drawing Title | Electronic File Name |
|---------------------|-------------------------------|----------------------|
| AF6098-O63300-01-AF | Scheme of Cathodic Protection | |

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

3.2 Standard and Regulations

1. Canada Shipping Act, 2001 (2001, c. 26) Hull Inspection Regulations (C.R.C., c.1432)
2. Lloyd's Register, Rules & Regulations for the Classification of Special Service Craft

3.3 Owner Furnished Equipment

1. N/A

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. Contractor shall afford the CGTA an opportunity to witness the Lloyd's inspection of the anodes prior to, and following all prescribed renewing.

4.2 Testing

1. Contractor shall notify PWGSC upon completion of this work item to afford the them the opportunity to verify the work has been completed as detailed in this Section. Verification of this work shall be performed before the ship undocking.

4.3 Certification

1. Prior to the close of contract, certification or other documentation shall be submitted to the TI and TA attesting to the quality of new materials and components.

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. Prior to the close of contract, a comprehensive report covering all work and replacements shall be submitted to PWGSC and CGTA.

5.2 Spares

1. N/A

5.3 Training

1. N/A

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

HD-04 STORM VALVES & SEA CONNECTIONS INSPECTION (SURVEY)

1: SCOPE:

The intent of this specification item is for Contractor to remove, disassemble, clean and layout for Lloyd's inspection all storm valves and sea connections

2: TECHNICAL DESCRIPTION

2.1 General

1. Contractor shall ensure all applicable safety precautions including equipment lock outs and tag outs are implemented prior to the start of work.
2. Contractor shall ensure, prior to the start of disassembly, that all precautions are taken to ensure that the reassembly and reinstallation of all system and equipment components shall be as per original and in accordance with manufacturer's specifications.
3. Contractor shall visually inspect all removed valves, record findings and report all deficiencies as they are identified to the CGTA and make recommendations for their repair or replacement. Contractor shall give the CGTA a copy of their hand written record indicating the findings and recommended repairs.
4. Contractor shall remove, disassemble, clean and layout for Lloyd's inspection all sea connections listed below.
5. Prior to reassembly and installation, Contractor shall arrange for a viewing by the attending Lloyd's Surveyor and CGTA, to inspect all valves as listed below.
6. Following inspection, all original valves shall be re-seated and reassembled using new CFM packing and gaskets.
7. All flange gaskets disturbed as a result of the valve servicing process shall be renewed using new CFM gasket material.

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

HD-04 STORM VALVES & SEA CONNECTIONS INSPECTION (SURVEY)

2.2 Location

List of Sea Water Valves: (Total 12)

| ID # | Description | Location | Size mm |
|---------|----------------------------------|-----------------|---------|
| V256001 | Main Isolation Valve (P) | Engine Room FWD | 250 |
| V256002 | Main Isolation Valve (Stbd.) | Engine Room FWD | 250 |
| V256003 | FWD Sea Chest Isolation Valve | Bow Thruster RM | 100 |
| V256007 | Port Sea Chest Circulation Valve | Engine Room FWD | 100 |
| V256008 | Stbd Sea Chest Circulation Valve | Engine Room FWD | 100 |
| V256010 | Port Sea Chest Vent | Engine Room FWD | 150 |
| V256011 | Stbd Sea Chest Vent | Engine Room FWD | 150 |
| V256012 | FWD Sea Chest Vent Valve | Bow Thruster RM | 65 |
| V256013 | P Sea Strainer outlet | Engine Room FWD | 250 |
| V256014 | Stbd Sea Strainer outlet | Engine Room FWD | 250 |
| V256018 | PS Main Engine Supply | Engine Room FWD | 200 |
| V256022 | SB Main Engine Supply | Engine Room FWD | 200 |
| V256042 | Fwd Sea strainer outlet | Bow Thruster Rm | 100 |
| V256090 | Cooling Water Supply Header Vent | Engine Room FWD | 50 |

List of Storm Valves (Total 4)

| ID # | Description | Location | Size |
|---------|----------------------------------|----------|------|
| V526023 | Fuel Oil Spill LCR O/B Discharge | | 50 |
| V526029 | HVAC/DK LCR O/B Discharge | | 50 |
| V526031 | Wet Gear RM O/B Discharge | | 50 |
| V593091 | Sewage Treatment Plant O/B Disc | | 50 |

List of Overboard Valves: (Total 10)

| ID # | Description | Location | Size |
|---------|--------------------------------|---------------|------|
| V256032 | P O/B Discharge | Engine Room | 150 |
| V256035 | Stbd O/B Discharge | Engine Room | 150 |
| V256065 | ACU O/B Discharge | Engine Room | 65 |
| V256114 | Stbd ME Gear Box O/B Discharge | Engine Room | 40 |
| V256115 | P ME Gear Box O/B Discharge | Engine Room | 40 |
| V256131 | Cyclone Filter O/B Discharge | Engine Room | 25 |
| V520018 | Bilge O/B | Engine Room | 50 |
| V520019 | Bilge O/B | Engine Room | 50 |
| V520056 | Bilge Eductor O/B | Engine Room | 80 |
| V593071 | O/B Discharge | | 32 |
| V256043 | PS Main Engine Exhaust | Steering Gear | 65 |
| V256045 | PS Diesel Generator Exhaust | Steering Gear | 50 |
| V256047 | SB Diesel Generator Exhaust | Steering Gear | 50 |
| V256049 | SB Main Engine Exhaust | Steering Gear | 65 |

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

HD-04 STORM VALVES & SEA CONNECTIONS INSPECTION (SURVEY)

List of Blow down Air Valves (Total 10)

| ID # | Description | Location | Size |
|---------|----------------------------------|-------------------|------|
| V551061 | Blow down Air Sea Chest (P) | | 25 |
| V551062 | Blow down Air Sea Chest (Stbd.) | | 25 |
| V551070 | Blow down Air RO Unit | | 15 |
| V551074 | Blow down Air FWD Sea Chest | Bow Thruster Room | 25 |
| V551075 | Blow down Air Bilge O/B valve | | 15 |
| V551076 | Blow down Air HVAC ACU O/B | | 15 |
| V551089 | Blow down Air Fire Water O/B | | 15 |
| V551126 | Blow down Air Gear Box P O/B | | 15 |
| V551127 | Blow down Air Gear Box Stbd O/B | | 15 |
| V551128 | Blow down Air Cyclone Filter O/B | | 15 |

2.3 Interferences

- Contractor shall take note of the interference items during the vessel viewing and include the costs associated with dealing with these items, including removals, reinstallations and painting of disturbed metal parts.

Refer to General Notes: section 12 and 17

3: REFERENCES:

3.1 Guidance Drawings/Nameplate data

Drawings

| Drawing Number | Description | Electronic # |
|-----------------|------------------------------------|--------------|
| AF6098-25600-01 | As Build Cooling Water System | |
| AF6098-52000-01 | Bilge Drainage & Dewatering System | |
| AF6098-52600-01 | Scuppers and Drains | |
| AF6098-55100-01 | Compressed Air System | |
| AF6098-59300-02 | Black Grey Water & Sanitary System | |

3.2 Standard and Regulations

- Canada Shipping Act 2001, Hull Inspection Regulations (C.R.C., c. 1432)
- Lloyd's Register, Rules & Regulations for the Classification of Special Service Craft Standard

3.3 Allowances

- N/A

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

HD-04 STORM VALVES & SEA CONNECTIONS INSPECTION (SURVEY)

3.4 Owner Furnished Equipment

1. N/A

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. Following all valves servicing and prior to installation, Contractor shall provide the attending Lloyd's Surveyor and CGTA an opportunity to inspect all valves as listed above.

4.2 Testing

1. Following the completion of all valve work, Contractor shall test all valves as listed above for sealing integrity at their respective maximum system operating pressures. All leaks shall be repaired at the Contractor's expense prior to the closing of contract.
2. The Contractor shall arrange the attending Lloyd's Surveyor, the TI and TA the opportunity to witness the successful testing of all valves as listed above.

4.3 Certification

1. Prior to the close of contract, certification or other documentation shall be submitted to the CGTA attesting to the quality of new materials and components such as packing, gaskets and valves.

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. Prior to the close of contract, a comprehensive report covering all work and replacements shall be submitted to the CGTA.

5.2 Spares

1. N/A

5.3 Training

1. N/A

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HD-05 PROPELLER SHAFT SEALS AND SHAFT CLEARANCES (SURVEY)

1: SCOPE:

The intent of this specification item is for Contractor to open up the Port and Starboard shaft seals, for Lloyd's Surveyor inspection. Port and Starboard propeller shafts clearances, inner, intermediate and outer, shall be measured for Lloyd's Surveyor inspection.

2: Technical Description

2.1 General

1. Contractor shall release the inboard side of the shaft seals Port and Starboard side, Contractor shall protect shaft seal sealing surfaces, both sides. Contractor shall ensure that the sealing surfaces are protected as described in the Simplan Seal Manual.
2. Prior to start the work, the contractor shall ensure all applicable safety precautions including equipment lock outs and tag outs are implemented.
3. All electrical and mechanical lockouts and tag outs shall be carried out to the satisfaction of the CGTA, as per the DFO/5737 Fleet Safety Manual, 7.B.5 - LOCKOUT AND TAGOUT. Contractor shall install /remove locks and tags accordingly during the scope of work. CGTA will assist Contractor in identifying the locations to perform the lock outs, but will not perform the actual lock out. Contractor shall supply and install their own locking devices and retain all keys during the scope of this work. Upon completion of all work the CGTA shall be in attendance when all locks/tags are removed.
4. Contractor shall ensure that prior to the start of disassembly, precautions are taken to ensure the reassembly and reinstallation of all system and equipment are as per original and in accordance with manufacturer's specification.
5. Contractor shall take the clearance readings between shaft and forward Sterntube Bearing, four places; top, bottom, Port and Starboard position in the presence of the Lloyd's Surveyor and CGTA.
6. Contractor shall open the Aft Sterntube Bearing covers from Port and Starboard side and take bearing clearance readings. Contractor shall take the clearance reading between shaft and Aft Sterntube Bearing - four locations; top, bottom, Port and Starboard positions in the presence of the Lloyd's Surveyor and CGTA.
7. Contractor shall remove the Rope Guard with Net Cutters from the Port and Starboard side in order to take bearing clearances. Contractor shall take the clearance readings between the shaft and Aft Bracket Bearing, four locations; top, bottom, Port and Starboard position in front of the Lloyd's Surveyor and CGTA.

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HD-05 PROPELLER SHAFT SEALS AND SHAFT CLEARANCES (SURVEY)

8. Contractor shall reinstall shaft seals, Port and Starboard, in accordance with the Simplan Manual and shall be tensioned as per the manual.
9. Contractor shall reinstall the Aft Sterntube Bearing covers, previously removed from the Port and Starboard side. Contractor shall lock the screws, to original position as per the original lock style.
10. Contractor shall reinstall the Rope Guard with Net Cutters previously removed from the Port and Starboard side to their original position and as per their original lock style.

2.2 Location

1. N/A

2.3 Interferences

1. Refer to General Notes: section 12 and 17

3: Reference

3.1 Guidance Drawings/Nameplate data

1. Manual

| NO. | Description |
|-----|---|
| 1 | Kamewa CP-A D Installation Manual (10Sooo239/49341-E) |

2. Drawing

| Drawing Number | Drawing Title | Electronic File Name |
|----------------|------------------------|----------------------|
| 6094-24300-01 | Shaft Line arrangement | |

3.2 Standards and Regulations

1. Canada Shipping Act, 2001: Marine Machinery Regulations (SOR/90-264)
2. Lloyd's Register, Rules & Regulations for the Classification of Special Service Craft Standard

3.3 Allowances

1. N/A

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HD-05 PROPELLER SHAFT SEALS AND SHAFT CLEARANCES (SURVEY)

3.4 Owner Furnished Equipment

1. N/A

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. Following the completion of taking the bearing clearances, and prior to reinstall, Contractor shall afford the attending Lloyd's Surveyor and CGTA the opportunity to inspect the condition and witness the taking of the bearing clearance.

4.2 Testing

1. Contractor shall conduct a dock trial where both of the rudder systems are tested for correct operation in each direction and to ensure that proper indication is received on all system gauges.
2. Upon successful completion of the dock trial a 1 hour sea trial up to 100% engine load shall be conducted to verify the normal operation of all systems.
3. If there is a need to delay the trial, due to any weather issue or seaway issue for sea trial, Contractor shall wait for the weather to permit completion of the sea trial.

4.3 Certification

1. Prior to the close of contract, certification or other documentation shall be submitted to the CGTA attesting to the quality of new materials and components.

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. Prior to the close of contract, a comprehensive report covering all measurements, related work and replacements shall be submitted to the CGTA. Two typewritten copies and one electronic copy of the report shall be provided to the CGTA .

5.2 Spares

1. N/A

5.3 Training

1. N/A

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HD-06 HULL CLEANING AND PAINTING

1: SCOPE:

The intent of this specification item is for Contractor to clean the ship's hull, properly prepare the surfaces, and recoat as specified with marine coatings. This work shall be carried out in conjunction with all other dry-docking items

2: TECHNICAL DESCRIPTION:

2.1 General

1. As noted in Section 2.1, paragraph 14 of Specification Item HD-01 Docking & Undocking, Contractor shall clean the ship's entire hull and appendages by high-pressure fresh water jetting to remove all salt deposits and marine growth (5,000 to 10,000 psi maximum for growth removal).

NOTE: This item is linked to several specification items; Contractor shall not quote this work in other specification items.

1. Underwater Hull painting shall extend from the underside of the keel to a level line that is visible at approximately the 2.8m draft marks. This area also includes all underwater appendages such as rudders, speed log and echo sounder cowlings, sea-chests and associated gratings. The total area to be prepared and painted is estimated to be 330 m².
2. Upon completion of cleaning, the underwater hull area shall be inspected by the Contractor and CGTA for loose paint and bare areas. Contractor shall bid on 10 square meters of bare area.
3. Contractor shall include an allowance of \$10,000 to cover expenses of an International Paint Representative (FSR). The FSR shall be reimbursed by Contractor from this allowance for their services, authorized travel, and living expenses reasonably and properly incurred in the performance of this work. This allowance shall form part of the overall bid and shall be adjusted by PWGSC 1379 action upon proof of final invoice.
4. All hull-mounted equipment such as anodes, echo sounders, speed log, transducers, etc. shall be suitably protected against damage during cleaning of the hull and application of the coatings. Contractor is responsible for repair / renewal of any such damaged items.
5. Contractor shall take measures to ensure that no damage, unnecessary cleaning or repairs accrue from the sand or grit blasting and/or the application of coatings. Grit used for blast cleaning shall not be permitted to enter into any part of the vessel or its equipment. All portholes, hull doors, freeing ports, hull openings, shafts and propellers shall be covered by suitable materials to prevent damage or entry of materials while sandblasting or when painting is in progress. Any cleaning required due to failure to comply will be at Contractor's expense.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

HD-06 HULL CLEANING AND PAINTING

6. Measures shall also be taken to ensure that application of coatings does not take place to surfaces or equipment other than those areas specified, and that any inlets or discharges in the shell shall not be blocked by the coating.
7. Contractor shall plug deck scuppers and discharges or take any measures necessary to prevent water or other liquids from contaminating the areas of plating being coated or prepared for coating.
8. All hull areas containing loose paint and/or bared steel shall be abrasive blasted to bare steel (SSPC-SP-10). Edges of intact paint shall be feathered back to a minimum of 10 mm, and blown clean with compressed air. The surface profile shall have a minimum roughness of 3 mils (75 microns).
9. Contractors shall bid on abrasive blasting to bare steel and re-coating 10 square meters of the underwater hull, also referred to as bare areas – refer to subsection 2 above. Contractor shall provide a unit rate for blasting to bare steel and painting underwater hull surfaces for adjustment purposes
10. The remaining underwater hull area shall be sweep-blasted to SSPC-SP-3 standard to remove existing anti-fouling coating and prepare the surface for acceptance of new coating. For adjustment purposes, Contractor shall provide a unit rate for sweep-blasting and painting underwater hull surfaces.
11. All underwater hull surfaces shall be degreased by solvent cleaning to SSPC-SP-1 standard prior to application of coatings.
12. Upon completion of the specified surface preparations, the affected areas shall be surveyed by the International Paints FSR and CGTA. The surface areas of bared steel and intact coatings shall be agreed upon, recorded by the Contractor and signed-off by all parties with copies of the document for each.
13. All necessary steps shall be taken after blasting to minimize steel oxidation by applying the underwater hull coatings in accordance with International Paints FSR instructions.
14. Contractor shall "cut-in" a straight line of paint at the top of the underwater hull coatings and prevent overspray of these coatings onto the above water hull area.
15. Application of underwater hull coatings are to be as follows:

First coat: Contractor to quote on applying one (1) coat of "INTERSHIELD 300", abrasion resistant epoxy, bronze, at 5 mils D.F.T. to bared steel areas.

Second coat: Contractor to quote on applying one (1) coat of "INTERGARD 263" epoxy tie coat, light gray, at 4 mils D.F.T. to the bared steel areas.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

HD-06 HULL CLEANING AND PAINTING

Third coat: Contractor to quote on applying one (1) coat of "INTERSPEED 640" TIN-FREE ANTIFOULING, RED, at 4 mils D.F.T. to spot coat the bared steel areas.

Forth coat: Contractor to quote on applying one (1) coat of "INTERSPEED 640" TIN-FREE ANTIFOULING, RED, at 4 mils D.F.T. to the entire underwater hull area as described in this Specification Item.

16. New coatings shall be applied in full compliance with manufacturer's requirements to provide a finished coat of no less than 13 mils D.F.T. overall.
17. Contractor is responsible for providing shelter(s) and heating required to meet the coating manufacturer's specifications and included in the overall bid price.
18. Deck machinery and other exposed equipment susceptible to damage by grit or coating material shall be protected.
19. Contractor shall strictly follow the manufacturer's requirements in relation to storage, preparation, application, etc. of the paint system described in this specification. Any requirement for variance from manufacturer's instructions shall be approved by the CG TA prior to proceeding.
20. Contractor shall remove from the vessel all traces of sand and/or grit used for blast cleaning. Contractor shall be responsible and liable for ensuring that the hull is clear and clean, prior to, during and immediately after the application of coatings.
21. New coatings shall be applied with atmospheric and steel conditions acceptable to paint manufacturer and CGTA. Application conditions shall be recorded by Contractor and/or paint manufacturer's representative for inclusion in the final Report to be submitted to CGTA.
22. In conjunction with any functional Q & A procedure, the following points shall be carried out:
 1. Provide a list of batch numbers with correspondent dates of manufacture.
 2. Record the quantity and type of any solvent added.
 3. Measure and record the ambient conditions.
 4. Record details of spray tips and pressures.
 5. WFT gauge readings shall be taken on a regular basis during application.
 6. Using a calibrated DFT gauge, fifteen (15) measurements per 9.3 square meters shall be taken and recorded. Upon agreement of consistency with the CGTA, fifteen (15) measurements per 93 square meters shall be taken and recorded.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

HD-06 HULL CLEANING AND PAINTING

Draft Markings

23. Contractor shall renew the following draft markings on the vessel by grit blasting clean each draft mark to the bare steel, re-punch the outline of the draft mark if required and applying the Interspeed 640 for under parts. Contractor shall supply and apply 2 coats of International Interthane 990 white paint (white) to each of the below mentioned markings within the punch outlines marked. The renewal of these marks shall be done after the final painting and curing of the underwater hull coating.
24. Forward: Both Port and Starboard side draft markings including the 2.4M and 1.6M meter markings for a total of 10 markings shall be renewed.
25. Aft: Both Port and Starboard side draft markings including the 2.0M and 2.8M meter markings for a total of 10 markings shall be renewed.
26. When renewing the draft markings Contractor shall ensure that the draft markings are the correct height and obliqueness to the hull, representing the true draft of the marking and vessel and are acceptable to the attending Lloyd's Surveyor.
27. Contractor shall renew the Port and Starboard Plimsoll markings at mid-ship including all load lines and mid-ship markings via the same procedure as outlined above for the draft marks.

2.2 Location

1. Vessel 's exterior hull

2.3 Interferences

1. Refer to General Notes: section 12 and 17

3: REFERENCES:

3.1 Guidance Drawings/Nameplate data

1. Drawing # AF6098-10000-03_AF Shell Expansion
2. Drawing # AF6098-63100-01_AF Paint schedule
3. Drawing # AF6098-89940-08_AF Draft Marks And Load Line Marks Plan Draft Marks
4. Recommended FSR: Nicole Hart, Technical Sale
AkzoNobel Coatings, Ltd.
(902) 468-1401
nicole.hart@akzonobel.co

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HD-06 HULL CLEANING AND PAINTING

3.2 Standards and Regulations

1. Contractor is responsible and liable for ensuring that the hull is clear and clean prior to, during, and immediately after the coating application.
2. Suitable storage facilities shall be provided close to the work site for the material and equipment, to ensure they will be maintained at the recommended temperature of the coating manufacturer for ease of preparation and proper application

3.3 Allowances

1. Refer to section 2.1 General, subsection 3 above.

3.4 Owner Furnished Equipment

1. All staging, crange, screens, lighting and any other support services, equipment, paint and materials necessary to carry out these specifications shall be Contractor supplied. Unless otherwise specified, all labour, materials, and equipment required to complete all tasks required in this specification shall be Contractor supplied

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. Contractor shall follow the inspection regime outlined in General Notes, and provide documentation to support all inspections and tests performed

4.2 Testing

1. Contractor and/or paint manufacturer's representative shall take sixty (60) wet film thickness measurements; thirty (30) per side, in areas where hull has been cleaned to bare steel. The measurements shall be witnessed by the CGTA and recorded with locations referenced to the attached shell expansion drawing. Unwitnessed measurements shall not be accepted.

4.3 Certification

1. Contractor shall provide certification for all hull coatings applied

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

5: DELIVERABLES::

5.1 Reports, Drawings and Manuals

1. Contractor shall maintain a Quality Assurance reporting program, which shall at minimum include the following points:
 - a. Which areas were blasted and indicate the blast media type and air pressure
 - b. Which areas were coated, with what product, and the volume of coating used.
 - c. Provide a list of batch numbers with corresponding dates of manufacture.
 - d. Record the quantity and type of any solvent added.
 - e. Measure and record all ambient conditions (Temperature, Humidity, Barometric pressure).
 - f. Hull temperature
 - g. Record all details of spray tips and pressures.
 - h. All WFT and DFT readings taken as prescribed in section 4.2 of this specification.
2. All information noted above shall be recorded in a typewritten (English) report and two (2) copies and one electronic copy shall be given to the CGTA.
3. Refer to Section 2.1 General, subsection 22

5.2 Spares

1. N/A

5.3 Training

1. N/A

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HD-07 SEA CHESTS AND STRAINERS (SURVEY)

1: SCOPE:

The intent of this specification item is to open sea chests and sea boxes for cleaning and inspection.

2: TECHNICAL DESCRIPTION:

2.1 General

1. Contractor shall open up the three (3) sea chests for cleaning and inspection. In addition, the two (2) main inlet sea strainers shall be opened as well. This work shall be carried out in conjunction with HD-06 Hull Cleaning and Painting and HD-01 Dry Docking.
2. Sea chest grates shall be removed so that internal inspection of the Sea Chests can take place.
3. Contractor shall follow the coating manufacturer's recommendations and procedures when applying the coatings outlined below. Contractor shall allow sufficient curing times as outlined by the manufacturer during the application of all coatings. Contractor shall take random thickness readings (mils) between coats with the CGTA in attendance.
4. Contractor shall note that access to the sea chests is only available via removable shell grids (one per chest). Contractor shall note the location of shell grids when planning blocking arrangements for dry docking. Contractor shall identify (mark) each grid being removed for their original location.
5. Contractor shall use hydro-blasting at 5,000 psi minimum and mechanical means (power brushing) for the cleaning the areas identified in this specification item. All debris shall be removed and disposed of ashore by Contractor. Copies of invoices detailing disposal of the debris shall be given to the CGTA.
6. The exact measured area of the sea chests is unknown at this time since it is included in the underwater hull area calculation, but it was estimated to be approximately 10 square meters.
7. For bidding purposes, Contractor shall bid on this area being 100% bare. Contractor shall quote on power tooling this area and prepping it for coating application as per the requirements outlined in HD-06 Hull Cleaning and Painting, Underwater Hull Painting section. The cost shall form part of the overall bid. Actual work carried out shall be adjusted up or down (credit), through PWGSC 1379 action. This area is considered part of the underwater hull area and as such coating applications are covered under HD-06 Underwater Hull Cleaning and Painting.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

8. Contractor shall remove all screens from each sea strainer for cleaning and inspection. Zinc Anodes shall be inspected for wastage and renewed as directed by the CGTA.
9. Contractor shall high pressure wash the grids and inlet areas and grid holes shall be mechanically reamed to their original diameter. Actual work carried out shall be adjusted up or down (credit), through PWGSC 1379 action.
10. All grids shall be prepared and coated as per HD-06 Hull Cleaning and Painting, coating shall be applied to both sides. First Coat shall be allowed to dry prior to grid being turned to apply coating to the opposite side. Grating holes shall not be obstructed by coating applications upon completion of this specification item.
11. The grid securing tabs on the hull shall be inspected. Any broken tabs shall be welded back into position. Contractor shall assume that 3 tabs shall require welding repairs and include a cost in their overall bid, actual work carried out shall be adjusted up or down (credit), through PWGSC 1379 action. Work to be completed in conjunction with HD-02 Section 2.1 General, subsection 7.



Example of a Grid tab (broken off)

2.2 Location

Sea Chests

| Tank Name | Location | Manhole Location |
|------------------|--------------|----------------------|
| Fwd Sea Chest | Fr 31.5 - 32 | Access from Exterior |
| Stbd Sea Chest | Fr 16.5 - 17 | Access from Exterior |
| Center Sea Chest | Fr 16 - 17 | Access from Exterior |

2.3 Interferences

1. Refer to General Notes: section 12 and 17

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3: REFERENCES:

3.1 Guidance Drawings/Nameplate data

1. N/A

3.2 Standards and Regulations

1. N/A

3.3 Allowances

1. N/A

3.4 Owner Furnished Equipment

1. N/A

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. N/A

4.2 Testing

1. N/A

4.3 Certification

1. N/A

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. N/A

5.2 Spares

1. N/A

5.3 Training

1. N/A

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

HD-08 ENGINE ROOM LIMBER HOLES

1: SCOPE:

The intent of this specification item is for Contractor to install limber holes in the outboard side main engine girder webs in the Main Mechanical Room to allow for water drainage to the bilge area.

2: TECHNICAL DESCRIPTION

1. Contractor shall complete this specification item as per the attached specification prepared by Allswater Consulting Engineer, Appendix A and include cost in their overall bid.
2. Notes:
 - Where the attached specification indicates will be, Contractor shall interpret the expression as shall be.
 - Where the attached specification indicates will need to be, Contractor shall interpret the expression as shall be.
 - Where the specification indicates owner and Technical Authority, Contractor shall interpret that as the CGTA.
 - Where expressed or imply within the specification that something could or will likely need to be addressed, Contractor shall interpret these expressions as being required and price the work accordingly in their bid unless advised otherwise by the CGTA.

3: REFERENCES:

3.1 Guidance Drawings/Nameplate data

1. As per specification prepared by Allswater – Appendix A

3.2 Standards and Regulations

1. Canada Shipping Act, 2001: Marine Machinery Regulations (SOR/90-264)
2. Lloyd's Register, Rules & Regulations for the Classification of Special Service Craft Standard

3.3 Allowances

1. N/A

3.4 Owner Furnished Equipment

1. Unless otherwise stated all material shall be CFM.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

HD-08 ENGINE ROOM LIMBER HOLES

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. As per specification prepared by Allswater – Appendix A
2. Contractor is responsible for arranging the local Lloyd's Surveyor to conduct inspections upon completion of work, the CGTA shall be informed of the scheduled visit as early as possible prior to the visit so as to be available for the viewing with the Surveyor.

4.2 Testing

1. As per specification prepared by Allswater – Appendix A

4.3 Certification

1. Contractor shall provide welding procedures for the specified work
2. As per specification prepared by Allswater – Appendix A

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. As per specification prepared by Allswater – Appendix A

5.2 Spares

1. N/A

5.3 Training

1. N/A

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H-01 LIFERAFTS ANNUAL INSPECTION

1: SCOPE:

The intent of this specification is to perform annual servicing and certification of the vessel's life rafts and hydrostatic releases.

2: TECHNICAL DESCRIPTION:

2.1 General

1. Contractor shall remove the Life rafts and their hydrostatic releases from their stowed positions on the vessel and transport them via commercial bonded carrier to and from a sub-contractor's premises for servicing / inspection.
2. Contractor shall subcontract the annual inspection and recertification of Life rafts to an Approved Lloyd's Register service facility that meets Original Equipment Manufacturer (OEM) certification.
3. An allowance of \$5,000 shall be provided for work completed by the sub-contractor. This allowance shall be adjusted up or down through PWGSC 1379 action upon proof of invoices.
4. Contractor is responsible for ensuring Life rafts are witnessed by Lloyd's Surveyor as required and for providing certificates to CGTA for the life rafts.
5. Contractor shall return Life rafts and their hydrostatic releases to the stowed position on the vessel.

2.2 Location

1. See References section

2.3 Interferences

1. Contractor is responsible for the identification of any interference items, their temporary removal and storage and reinstallation on the vessel.
2. Contractor is responsible for protecting surrounding area and equipment while carrying out this work.

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H-01 LIFERAFTS ANNUAL INSPECTION

3: REFERENCES:

3.1 Guidance Drawings/Nameplate data

| <u>Liferaft</u> | <u>Size</u> | <u>Location</u> | <u>Serial #</u> |
|-----------------|-------------|------------------------|-----------------|
| Port | 16 pers. | Port Side Bridge Deck | XDC 1FC55B111 |
| Stbd | 16 pers. | Stbd. Side Bridge Deck | XDC 0FC30B111 |
| SAR | 4 pers. | Aft Bridge Deck | XDC 1FG80C212 |

3.2 Standards and Regulations

1. The following Coast Guard Standards and or Technical Bulletins shall be adhered to in the course of executing this specification. Copies of these standards and bulletins can be obtained from the CCG Technical Authority.

- Canadian Coast Fleet Safety Manual (DFO 5737)

3.3 Allowances

1. Refer to Section 2.1, subsection 3 above

3.4 Owner Furnished Equipment

1. Unless otherwise specified, all materials, labour, and equipment required to complete all specified work shall be Contractor supplied

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. Contractor and CGTA shall ensure life rafts are stowed and secured properly in their holders, and all required certification is present

4.2 Testing

1. Inspection and testing shall be completed as per Lloyd's Registry requirements.

4.3 Certification

1. Contractor shall provide all test certificates, and endorsement of safe operation required by Lloyd's Register for certification to the CGTA.

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H-01 LIFERAFTS ANNUAL INSPECTION

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. Contractor shall provide a list of the work that was performed on each life raft.

5.2 Spares

1. N/A

5.3 Training

1. N/A

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H-02 FUEL TANK VENT MODIFICATIONS (SURVEY)

1: SCOPE:

The intent of this specification item is for Contractor to modify the existing fuel tank venting system by adding an additional independent vent to fuel tank #9, and inspect the fuel tank for Lloyd's Register credit.

2: TECHNICAL DESCRIPTION:

2.1 General

1. When the vessel arrives at Contractor's facility, the vessel will ensure the fuel tanks are pumped as low as reasonably possible, leaving approximately eight (8) cubic meters (m³) of residue fuel. Fuel shall be removed from tank #9 and disposed of by Contractor, in accordance with Provincial regulations. Contractor shall quote a rate per cubic meter of disposal, for PWGSC 1379 adjustment purposes.
2. There is a number of interference items present in the work area. Contractors are strongly advised to attend the viewing to witness these interferences, as no extra charges for removal or reinstallation of interference items will be authorized.
3. Contractor shall open up tank #9 by the removing manhole cover(s). The cover(s) are secured with nuts and bolts, and Contractor shall ensure they retain all of the hardware for reinstallation.
4. Tank #9 shall be mechanically ventilated with equipment approved for explosive atmospheres. Tank #9 shall be ventilated to atmosphere and not to areas inside the vessel under any circumstances. Contractor shall supply, operate, and maintain all fans and associated equipment.
5. Contractor shall arrange for and ensure Gas-free and safe for "Hot Work" certificates are issued and posted before entry in to the tank is allowed. Contractor shall maintain the tank in a gas-free state by maintaining adequate ventilation and re-testing as required by regulations for the duration of the work.
6. Any sludge or residue present in the tank shall be removed ashore for disposal in compliance with provincial regulations. All drain holes in the tank structure shall be cleared of any obstruction so as to allow free flow of liquids. Contractor shall ensure that tank outlets, inlets and sounding tubes are free of any dirt, debris, and obstructions.
7. The tank and affected piping shall be hydro-blasted with hot water to ensure biological contaminants are killed (Minimum Water Temperature Required is 80° C).

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8. Tank #9 shall be thoroughly cleaned to Hand Tool SSPC-SP2 standard. Any rusty areas shall be power tool cleaned to SSPC-SP3 standard. All scale, dirt and debris shall be removed ashore and disposed of by Contractor.

NOTE: The proposed tank vent piping runs are for bidding purposes only. The exact piping diameter and general locations shall be determined by CGTA and Lloyd's Register prior to the vessels arrival. Contractor shall determine the exact piping routes in consultation with CGTA and Lloyd's prior to the work commencing.

9. A new vent line shall be installed at the top aft port side corner of fuel tank #9 to the aft main deck area to allow for proper venting of the tank during fueling operations.
10. Contractor shall cut a hole in the top of fuel tank #9 to allow for the fitting of a CFM 50 mm (2 inch) diameter vent pipe. This new vent pipe shall be fitted to the tank in the same manner as the existing forward vent.
11. Contractor shall fit a 90° elbow to allow the vent to run aft and then follow the proposed piping route, Figure H-02-3 and H-02-4. The length and type of piping required is eight (8) meters of 50 mm schedule 40, mild steel pipe.
12. Contractor shall fit the vent pipe with sufficient flange connections to allow the vent pipe to be removed and blanked for tank testing. Contractor shall bid on supplying and installing 9 flanges with stainless steel fasteners. Piping runs shall also be fitted in such a way to allow for removal to access the port ballast tank and clearance for work to be done on the steering gear system.
13. Contractor shall ensure deck penetration is reinforced with a 10 mm thick doubler plate, having an outside diameter of 220 mm.
14. Contractor shall provide a copy of their welding procedures to the CGTA prior to commencing fabrication F5561-151049n and installation of #9 fuel tank vent line.
15. Contractor shall blank off all connection to #9 Tank prior to commencing work. Upon completion of this specification item Contractor shall reinstall all connections using new CFM gaskets (approved for fuel oil applications) and existing fasteners.
16. Contractor is required to view the fuel tank area, during the site visit, to see where the new pipe installation will be fitted prior to bidding. Site visit is necessary to determine the possible interferences and understand the proposed piping configuration in order to meet the specification requirements.

H-02 FUEL TANK VENT MODIFICATIONS

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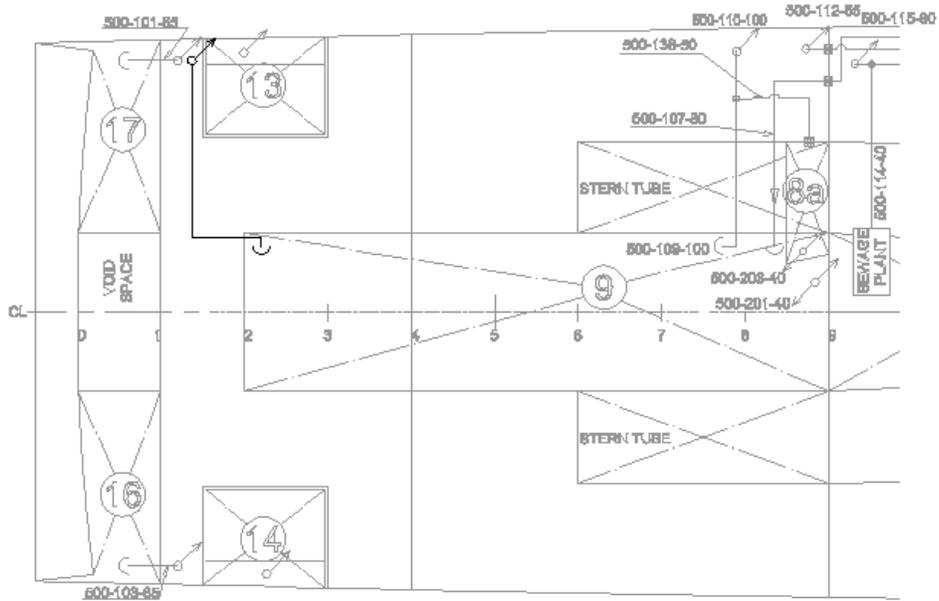


Figure H-02-1 Plan View of Proposed Venting Arrangement



Figure H-02-2 Fuel Tank #9 Proposed Vent Location

H-02 FUEL TANK VENT MODIFICATIONS

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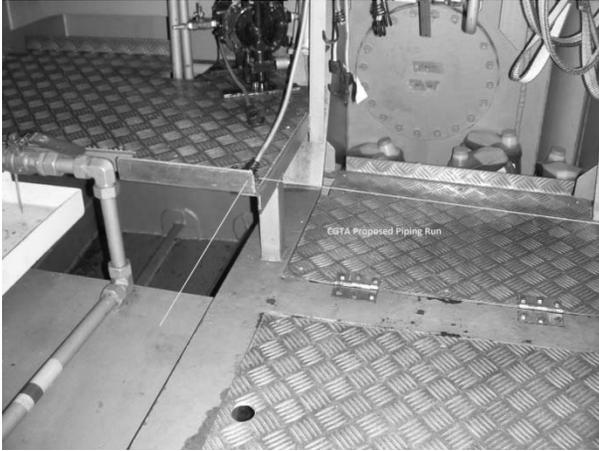


Figure H-02-3 Proposed Piping Runs



Figure H-02-4 Deck Penetration Location

17. Contractor shall fabricate and install a drip tray/save all around the new vent area on the aft main deck. This tray shall extend from the ship's side to a reasonable location inboard to accommodate the enclosing of all pipes in the area. This tray shall have a minimum height of 75mm and a threaded drain plug fitted to allow for the draining of any accumulated water. Forward fuel vent tray can be viewed for reference.
18. The exterior deck end of the fuel tank #9 vent pipe shall be fitted with a flanged connection to accommodate the fitting of a 50 mm Government Furnished Material (GFM) DN50 Winteb vent head. Contractor shall install the new vent head using new CFM gaskets, new stainless steel hardware, and isolation kits.
19. Any insulation or mechanical items which are displaced to allow for the work to be completed shall be reinstalled and secured to the satisfaction of CGTA.
20. Contractor shall, for all welded areas, provide NDT testing to ensure there are no defects, while all fabricated piping sections shall be pressure tested prior to installation. Any defects found shall be repaired by Contractor and retested prior to acceptance.
21. After obtaining Lloyd's approval and credit, the exterior vent pipe and drip tray shall be painted. All interior vent piping shall receive 2 coats of "INTERSHIELD 300", abrasion resistant epoxy, Aluminium.
22. Upon completion of vent installation, Contractor shall flush all piping and remove any water, dirt or debris present in the fuel tank. Tank #9 shall be wiped clean using lint free rags.

H-02 FUEL TANK #9 VENT FABRICATION

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

23. Tank manhole cover(s) shall be secured using new contractor supplied 1/4" nitrile rubber gaskets, compatible with installation in Fuel Oil tanks. All manhole fasteners shall be secured with anti-seize compound applied.
24. Contractor shall pressure test tank #9 in accordance with the requirements of the attending Lloyd's Surveyor. For bidding purposes, Contractor shall bid on providing a pneumatic test to 2.5 psi as outlined in the testing procedures.
25. All overflow connections; fill, drain, sensor openings, sounding and vent lines shall be blanked (sealed) prior to testing, and opened following completion. All blanks required for pneumatic testing shall be supplied, installed and later removed by Contractor. Contractor shall notify CGTA a minimum of two (2) hours prior to testing the tank.

2.2 Location

1. Tank #9 is located in the steering gear compartment. There are 2 manhole covers, one located in the Auxiliary Mechanical Room (AMR) and one in the Steering Gear Compartment.
2. Tank Plan for tank locations will be made available.

2.3 Interferences

1. Contractor is responsible for the identification of all interference items, their temporary removal and storage and reinstallation on the vessel.
2. Refer to General Notes: section 12
3. Contractor is responsible for protecting surrounding area and equipment while carrying out this work.

3: REFERENCES:

3.1 Guidance Drawings/Nameplate Data

1. Drawing: AF6098-89940-02 Tank Arrangements & Capacity Plan

| <u>Fuel Tank</u> | <u>Access Locations</u> | <u>Capacity (m³)</u> |
|------------------|--|---------------------------------|
| #9 | AMR port side inboard of #1 S/S Generator and Steering Gear Compartment - one manhole in each. | 8.5 |

H-02 FUEL TANK VENT MODIFICATIONS

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

3.2 Standards and Regulations

1. Contractor is required to abide by the Fleet Safety and Security Manual provisions for Hot Work, Confined Safe Entry and Fall Protection and/or follow an equivalent safety management system. Task Hazard assessments will be performed prior to work commencing each working day.
2. Any necessary welding shall be performed to CWB 47.1 and visually inspected by a qualified welding supervisor.
3. Any item of work involving the use of heat in its execution requires that Contractor advise the CGTA before starting such heating and upon its completion.
 - Contractor shall provide suitable fire retardant coverings to protect wire ways, cables, equipment and structure from welding slag, splatter etc. in all surrounding areas.
 - Contractor shall provide sufficient suitable fire extinguishers and a fire watch during any such heating and until the work has cooled.
 - The Ship's extinguishers shall **not** be used except in an emergency.
 - Contractor shall service and shall refill any ship's extinguisher used under such conditions
4. Contractor is responsible for arranging for a certified Marine Chemist to visit the vessel and to carry out the necessary testing to obtain safe for hot work certificates

3.3 Allowances

1. N/A

3.4 Owner Furnished Equipment

1. 100mm Winteb Vent Head

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. Contractor is responsible for coordinating all inspections with the Lloyd's Surveyor, and produce an inspection schedule prior to commencement of work.

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2. Contractor shall provide CGTA a minimum of four hours' notice of each inspection, to allow his/her attendance.
3. Upon completion of all work, repairs and testing, Contractor and CGTA shall conduct a final inspection and ensure tank #9, covers, vents and piping connections have been returned to operating conditions and attending Lloyd's Surveyor has completed all inspections for credit

4.2 Testing

1. Attending Lloyd's Surveyor shall determine the test method. All tests shall be witnessed by attending Lloyd's Surveyor and CGTA.
2. For bidding purposes, Contractor shall bid on pneumatic testing of tank #9 to 2.5 psi. The bid price shall include the installation and removal of blanks for suctions, overflow pipes, vent, etc.

4.3 Certification

1. Contractor is responsible for providing mill certificates for all piping and flanges used.
2. Contactor shall ensure they have Lloyd's approvals prior to all work commencing and approvals upon completion.

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. Contractor shall provide a copy of all test certificates to CGTA

5.2 Spares

2. N/A

5.3 Training

1. N/A

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H-03 FIXED FIRE FIGHTING SYSTEMS

1: SCOPE:

The intent of this specification item is for Contractor to complete the annual inspection of the ships fixed fire extinguishing systems.

2: TECHNICAL DESCRIPTION:

2.1 General

1. Contractor shall arrange to have the vessel's fixed fire extinguishing systems (FM-200 and Galley Kiddie-System) inspected, tagged and dated by a service agency certified by Lloyd's Register, and approved by the System Manufacturer.
2. Cylinders shall be individually weighed. All weights, levels, and pressures of cylinders shall be measured and recorded.
3. All rotating beacons and flashing lights shall be tested and proven in good working order.
4. All audible alarms shall be tested and proven in good working order.
5. All wires and cables shall be proven in good working order.
6. The FM-200 Nitrogen Driver shall be proven in good working order.
7. All piping and nozzles shall be proven clear.
8. Any required repairs identified as a result of the inspections shall be brought to the attention of CGTA before commencing any repair work. All repairs shall be negotiated through PWGSC 1379 action.
9. All cylinders shall be properly secured in their original locations after inspection

2.2 Location

1. FM-200 System – MMR and Emergency Generator Room
2. Kiddie System – Galley and Dry Stores.

2.3 Interferences

1. Contractor is responsible for the identification of any interference items, their temporary removal and storage and reinstallation on the vessel.
2. Contractor is responsible for protecting surrounding area and equipment while carrying out this work.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

3: REFERENCES:

3.1 Guidance Drawings/Nameplate Data

1. N/A

3.2 Standards and Regulations

1. The following Coast Guard Standards and or Technical Bulletins shall be adhered to in the course of executing this specification. Copies of these standards and bulletins can be obtained from the CGTA.
 - Canadian Coast Fleet Safety Manual (DFO 5737)
 - Coast Guard ISM Lock Out/Tag Out Procedures
2. Contractor shall refer to General Notes for any other applicable standards and regulations

3.3 Allowances

1. N/A

3.4 Owner Furnished Equipment

1. Unless otherwise stated, all materials, labour, and equipment required to complete all requirements of this specification shall be CFM.

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. Contractor shall arrange all necessary Lloyd's inspections related to the firefighting and fire detection system inspections.

4.2 Testing

1. Systems shall be inspected to the satisfaction of Lloyd's Surveyor and OEM

4.3 Certification

1. Two (2) typewritten and one (1) electronic copies of all inspection reports and certifications shall be provided to CGTA

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. A record of all cylinder weights and levels, both before and after servicing, shall be provided in the final report.
2. A list (or drawing) of all audible alarms, rotating beacons, and wiring checked shall be provided in the final report. Any repairs completed shall be listed.

5.2 Spares

1. N/A

5.3 Training

1. N/A

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

H-04 FIRE DETECTION SYSTEM INSPECTION

1: SCOPE:

The intent of this specification item is for Contractor to complete the annual inspection of vessel's Notifier CAB-4 Series Fire Detection System.

2: TECHNICAL DESCRIPTION:

2.1 General

1. Contractor shall arrange to have the ship's Notifier AFP-200 fire detection and alarm system inspected, tested and certified by a service agency certified by Lloyd's Register, and approved by the System Manufacturer.
2. All components of fire detection system shall be tested for correct function as directed by the service agent. This includes, but is not limited to: primary and secondary control panels, all detectors, audible alarms, rotating beacons, and flashing lights.
3. Any repairs required as a result of the inspections findings shall be brought to attention of CGTA as early as possible. Repair work shall be approved by CGTA, and negotiated through PWGSC 1379 action.
4. Two (2) copies of all inspection and test certificates shall be provided to CGTA.
5. All work shall be completed to satisfaction of CGTA and Lloyd's Surveyor.

2.2 Location

1. The system consists of:
 - Alarm & Monitor Panel located on the Bridge
 - Secondary panel in the MCR
 - Smoke Detectors, Heat Detectors, Pull Stations, Bells, Beacons, Alarm Activation and Fire Door Activation, installed throughout the ship.

2.3 Interferences

1. N/A

3: REFERENCES:

3.1 Guidance Drawings/Nameplate Data

1. N/A

H-04 FIRE DETECTION SYSTEM INSPECTION

[BACK TO TABLE OF CONTENTS](#)

H-04 FIRE DETECTION SYSTEM INSPECTION

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

3.2 Standards and Regulations

1. CAN/ULC-S527M Standard for Control Units for Fire Alarm Systems

3.3 Allowances

1. N/A

3.4 Owner Furnished Equipment

1. N/A

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. Inspection shall be completed as per Manufacturers recommendations and as stated in Technical Description.

4.2 Testing

1. A functional test of entire system is required, as described in Technical Description. Acceptance is based on the satisfaction of the CGTA.

4.3 Certification

1. Fire Detection System shall be credited by Lloyd's Register
2. Inspection and test certificates from Service Agent upon completion of this specification.

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. Two (2) copies of inspection report shall be provided to CGTA.
2. A list of all defects and replacements shall be provided to CGTA.

5.2 Spares

1. N/A

5.3 Training

1. N/A

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

H-05 PORTABLE FIRE EXTINGUISHERS

1: SCOPE:

The intent of this specification item is for Contractor to complete the annual inspection of all 43 portable fire extinguishers onboard the vessel. This is also to include 2 hydro tests and 5 six year inspections.

2: TECHNICAL DESCRIPTION:

2.1 General

1. Contractor shall arrange to have all the vessel's portable fire extinguishers inspected, tagged and dated by a locally authorised service agency.
2. The following is a summary listing of extinguishers to be dealt with:

| Bridge Deck | | | | | |
|-------------|--------------------|---|----------|-----------|------------|
| # | Type | Location | Serial # | Hydro Due | 6 Year Due |
| 1 | 9.4 L AFFF | Port Battery Locker Service Hatch | 790034 | Jan-17 | |
| 2 | 6 L Wet Chem | Starboard Battery Locker Service Hatch | 18415 | Jan-17 | |
| 3 | 10 ABC | FI-Fi Locker Service Hatch | 283830 | Jan-24 | Jan-18 |
| 4 | 20 ABC | FI-Fi Locker Service Hatch | 40872 | Jan-24 | Jan-18 |
| 5 | 15 CO ₂ | FI-Fi Locker Service Hatch | 762534 | Jan-17 | |
| 6 | 10 ABC | Bridge Starboard Entrance Top of Stairs | 284348 | Jan-24 | Jan-18 |
| 7 | 15 CO ₂ | Command Centre Fwd | 770578 | Jan-17 | |
| 8 | 10 ABC | Command Centre Aft | 283641 | Jan-24 | Jan-18 |
| Main Deck | | | | | |
| # | Type | Location | Serial # | Hydro Due | 6 Year Due |
| 9 | 9.4 L AFFF | Fwd Alleyway Outside Ch/Eng Cabin | 790024 | Jan-17 | |
| 10 | 15 CO ₂ | Electronic Equipment Room | 762536 | Jan-17 | |
| 11 | 6 L Wet Chem | Galley | 18413 | Jan-17 | |
| 12 | 9.4 L AFFF | Aft Alleyway Outside Dry Food Stores | 790014 | Jan-17 | |
| 13 | 10 ABC | Stbd Breezeway Outside F/O Spill Locker | 983157 | Jan-26 | Jan-20 |
| 14 | 10 ABC | Emergency Generator Compartment | 284346 | Jan-24 | Jan-18 |
| 15 | 15 CO ₂ | Emergency Generator Compartment | 763244 | Jan-17 | |

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

H-05 PORTABLE FIRE EXTINGUISHERS

| Below Main Deck | | | | | |
|------------------------|--------------------|---------------------------------------|-----------------|------------------|-------------------|
| # | Type | Location | Serial # | Hydro Due | 6 Year Due |
| 16 | 9.4 L AFFF | Bow Thruster Compartment | 790016 | Jan-17 | |
| 17 | 9.4 L AFFF | Fwd Alleyway by Washrooms | 368099 | Jan-18 | |
| 18 | 9.4 L AFFF | Outside MCR | 790028 | Jan-17 | |
| 19 | 10 ABC | MCR | 284193 | Jan-24 | Jan-18 |
| 20 | 9.4 L AFFF | Main Machinery Room Fwd Centre | 568142 | Jan-18 | |
| 21 | 20 ABC | Main Machinery Room Fwd Stbd | 40870 | Jan-24 | Jan-18 |
| 22 | 9.4 L AFFF | Main Machinery Room Midway Stbd Side | 568145 | Jan-18 | |
| 23 | 15 CO ₂ | Main Machinery Room Midway Port Side | 763177 | Jan-17 | |
| 24 | 15 CO ₂ | Main Machinery Room Aft Centre | 737479 | Jan-16 | |
| 25 | 15 CO ₂ | Auxiliary Machinery Room Fwd Entrance | 770604 | Jan-17 | |
| 26 | 9.4 L AFFF | Auxiliary Machinery Room Aft Entrance | 790027 | Jan-17 | |
| 27 | 9.4 L AFFF | Steering Gear Compartment | 790017 | Jan-17 | |

| FRC | | | | | |
|------------|-------------|------------------------------|-----------------|------------------|-------------------|
| # | Type | Location | Serial # | Hydro Due | 6 Year Due |
| 28 | 5 ABC | In front of driver's console | 107657 | Jan-22 | Jan-16 |
| 29 | 5 ABC | In front of driver's console | 821562 | Jan-22 | Jan-16 |

| Sheppard Boat | | | | | |
|----------------------|-------------|-----------------|-----------------|------------------|-------------------|
| # | Type | Location | Serial # | Hydro Due | 6 Year Due |
| 30 | 4 ABC | Shepherd boat | 27344 | Jan-22 | Jan-16 |

3. Extinguishers shall be dealt with so that no space will be left without a portable fire extinguisher at any one time. NOTE: Contractor shall provide temporary equivalent units for use if any extinguishers are required to be removed from the ship for servicing.
4. Any cost of transporting the extinguishers from vessel to the place of inspection, and including the return of the extinguishers to the vessel, shall be included in the overall bid.
5. The following fire extinguisher shall be hydro tested:
 - 15 lb CO₂ Serial # 737479, location: Main Machinery Room Aft Centre
6. The following five (5) fire extinguishers shall have a 6 year inspection completed:
 - 5 lb dry chem. Serial # 107657, location: FRC
 - 5 lb. dry chem. Serial # 821562, location: FRC
 - 4 lb. dry chem. Serial # 27344, location: Shepherd Boat

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

H-05 PORTABLE FIRE EXTINGUISHERS

7. Any required repairs identified as a result of the inspections shall be negotiated through PWGSC 1379 action.
8. Extinguishers shall be properly secured in their original locations after inspection.

2.2 Location

1. All throughout ship

2.3 Interferences

1. Contractor is responsible for the identification of any interference items, their temporary removal and storage and reinstallation on the vessel.
2. Contractor is responsible for protecting surrounding area and equipment while carrying out this work.

3: REFERENCES:

3.1 Guidance Drawings/Nameplate data

1. N/A

3.2 Standards and Regulations

1. The following Coast Guard Standards and or Technical Bulletins shall be adhered to in the course of executing this specification. Copies of these standards and bulletins can be obtained from the CCG Technical Authority.
 - Canadian Coast Fleet Safety Manual (DFO 5737)
 - Coast Guard ISM Lock Out/Tag Out Procedures
2. Contractor shall refer to General Notes for any other applicable standards and regulations

3.3 Allowances

1. N/A

3.4 Owner Furnished Equipment

1. Unless otherwise stated, all materials, labour, and equipment required to complete all requirements of this specification shall be CFM.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

H-05 PORTABLE FIRE EXTINGUISHERS

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. Contractor shall arrange all necessary Lloyd's inspections related to the portable fire extinguishers.

4.2 Testing

1. Systems to be inspected to the satisfaction of Lloyd's Register and OEM.

4.3 Certification

1. Two (2) copies of all inspection reports and certifications shall be provided to CGTA.

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. Contractor shall a report detailing all work completed on extinguishers

5.2 Spares

1. N/A

5.3 Training

1. N/A

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

H-06 ANNUAL DUCT CLEANING

1: SCOPE:

The intent of this specification item is for Contractor to access and clean the air ducting for galley exhaust (including the galley range hood) and Laundry. In addition Contractor shall clean dryer ducting from the laundry room.

2: TECHNICAL DESCRIPTION:

2.1 General

1. Contractor shall provide the services of a qualified HVAC representative to mechanically clean the vessel's ducting. All ducting noted above shall be cleaned thoroughly of dust, dirt, debris, scale, rust, etc. Contractor is responsible for making penetrations for the cleaning equipment and the subsequent sealing of such access points with an approved material for the type of ducting being worked on, upon completion of all work. Plastic plugs shall not be used to seal up access point. Contractor shall co-ordinate the cleaning with the ship's staff in order to minimize interruption of normal work routines.
2. Contractor shall remove ceiling panels in order to access the applicable ventilation trunking, ducting, and tubes. All items shall be reinstalled in good order upon completion of all work. Any wiring, piping, lighting, fixtures, fasteners, metal work, etc. that has been removed or repositioned to carry out this work shall be reinstalled in good order in its original location and condition. All insulation removed shall be reinstalled accordingly and all taped seams shall be re-taped with new approved tape (foil-grip) for HVAC systems (duct tape shall not be used).
3. Prior to commencing any work, Contractor shall tag and lock out each system supply/exhaust fan set. All electrical and mechanical lockouts and tag outs shall be carried out to the satisfaction of the CGTA, as per the DFO/5737 Fleet Safety Manual, 7.B.5 - LOCKOUT AND TAGOUT. Contractor shall install /remove locks and tags accordingly during the scope of work. CGTA will assist Contractor in identifying the locations to perform the lock outs, but will not perform the actual lock out. Contractor shall supply and install their own locking devices and retain all keys during the scope of this work. Upon completion of all work the CGTA shall be in attendance when all locks/tags are removed.
4. Contractor is responsible for all materials, coverings, and equipment required for performing this task. All labor required for completing the cleaning, including that required for removals, reinstallation, opening, and closing up of equipment and ducting is Contractor's responsibility. Contractor shall remove all materials used in the performance of this specification requirement, from the vessel. Ship's waste receptacles will not be used for disposal of any removed materials.

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

H-06 ANNUAL DUCT CLEANING

5. Contractor is responsible for the cleaning of all spaces, furniture, equipment, etc. that is contaminated or soiled during this scope of work.
6. All systems shall be closed up as per their original configuration upon completion of the cleaning process.

GALLEY

7. The 120cm by 90cm range hood is serviced by a single duct approximately 160mm in diameter and approximately 3m in overall length.
8. The Range Hood and trunking shall be chemically and/or steam cleaned. All dirt, grease, debris, and cleaning fluids shall be trapped and shall be removed ashore and disposed of by Contractor.
9. Prior to cleaning, all mechanical and electrical connections to range hood shall be released by Contractor, including piping for fire extinguishing system, associated controls and electrical lighting. All fittings liable to interfere with cleaning of the range hood shall be temporarily relocated and protected.
10. The range hood filter screens shall be removed and steam cleaned.
11. Trunking in way of the exhaust fan shall be opened to allow complete degreasing of fan, fan motor, and its support brackets. Approximately 2m of 25cm by 20cm trunking is involved. Contractor shall remove sections of the stainless steel cladding for access.
12. Trunking and range hood shall be reassembled in good order and adjusted upon completion of cleaning and inspection by Contractor. All items removed or relocated to allow for the work to proceed shall be reassembled in good order and functionally tested to the satisfaction of the CGTA.

Laundry Dryers

13. Laundry Room – Compartment

Laundry/ Linen Locker Door #19
14. Natural supply ducting (approximately 15 cm diameter) and forced exhaust ducting (approximately 10cm by 15cm) shall be accessed, opened and cleaned of dust and debris.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

H-06 ANNUAL DUCT CLEANING

2.2 Locations

Galley

Below the main deck – bottom of stair well turn right into alleyway, look to the right into the alleyway and next door on the left.

Laundry Room

Located below the main deck at the foot of the stair well turn left.

HVAC Main Unit

Located on the main deck forward of the wheelhouse, access from outside the vessel.

2.3 Interferences

1. Contractor is responsible for the identification of any interference items, their temporary removal and storage and reinstallation on the vessel.
2. Contractor is responsible for protecting surrounding area and equipment while carrying out this work.

3: REFERENCES:

3.1 Guidance Drawings/Nameplate Data

1. Contractor shall have access to 1:100 scale drawings: A/C System Diagrams which details the location of air handling units, outlets, return air dampers and ducting runs.

DWG: HVAC Single Line DWG AF6099-51000-01

3.2 Standards and Regulations

1. The following Coast Guard Standards and or Technical Bulletins shall be adhered to in the course of executing this specification. Copies of these standards and bulletins can be obtained from the CCG Technical Authority.
 - Canadian Coast Fleet Safety Manual (DFO 5737)
 - Coast Guard ISM Lock Out/Tag Out Procedures
2. National Air Duct Cleaners Association (NADCA), international standard for Assessment, Cleaning and Restoration (ACR) of HVAC Systems, 2013.

3.3 Allowances

1. N/A

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

H-06 ANNUAL DUCT CLEANING

3.4 Owner Furnished Equipment

1. Contractor shall supply all materials, equipment and parts required to perform the specified work unless otherwise advised.

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. Contractor and CGTA shall inspect all spaces to ensure the specification requirements have been met and all interference, insulation and coverings removed are reinstalled to their original condition.

4.2 Testing

1. Upon completion of work a functional test of the system shall be conducted in the presence of the CGTA to prove the system is operating as per its original condition. All work shall be performed to the satisfaction of the CGTA.

4.3 Certification

1. N/A

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. Upon completion of all work, two (2) type written copies and one (1) electronic copy of the service report shall be provided to CGTA.

5.2 Spares

1. N/A

5.3 Training

1. N/A

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

H-07 ANNUAL LIFEBOAT DAVIT INSPECTION (SURVEY)

1: SCOPE:

The intent of this specification item is for Contractor to survey the Welin Lambie Life Boat Davit, for Lloyd's Registry annual inspection and testing. In addition, the Lifeboat Davit shall receive its' annual inspection as per Welin Lambie recommendations.

2: TECHNICAL DESCRIPTION

1.1 General

1. Contractor shall obtain the services of a qualified Welin-Lambie Field Service Representative (FSR). Contractor shall provide all equipment, hardware, personnel, etc. to carry out the required work under the direction and guidance of the FSR. Contractor shall obtain certification for the FSR from Welin Lambie.
2. Contractor shall include an allowance of \$20,000 to cover expenses of a Welin Lambie FSR. The FSR shall be reimbursed for any necessary parts, services, authorized travel and living expenses reasonably and properly incurred in the performance of the work. Contractor shall provide the fee schedule from Welin Lambie for the services of the FSR. This info shall be included in the PWGSC data pricing sheet. Final costs for the FSR as well as parts and materials shall be adjusted up/down upon proof of invoices through PWGSC 1379 action.
2. All manufacturer's procedures and recommendations shall be followed during the scope of work with technical specifications being adhered to as a minimum by Contractor. Contractor shall arrange for scheduling the on-site presence of a Lloyds Surveyor as required for inspections/testing during the course of this work.
3. Contractor shall supply all the necessary staging and crange as required to work on, remove, transport, and install the various components during this inspection and/or repair process if warranted. All personnel working on the davit system shall be suitably trained in fall restraint and all fall restraint equipment shall be certified and current.
4. Contractor shall supply certified weights for the load test as instructed by the FSR. Contractor shall contact Welin Lambie for the specific type of weight and quantity required for this specific lifeboat. The supply, transport, hook up and removal of these weights for the specification shall be included in the overhaul bid.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

H-07 ANNUAL LIFEBOAT DAVIT INSPECTION

5. Prior to the commencement of any and all work, Contractor shall lock out the power pack unit, associated condensation heaters, and the oil reservoir immersion heater as per the Coast Guard ISM Safety Lockout Procedure 7.C.1.M S36-01 safety code. All electrical and mechanical lockouts and tag outs shall be carried out to the satisfaction of the CGTA, as per the DFO/5737 Fleet Safety Manual, 7.B.5 - LOCKOUT AND TAGOUT Contractor shall install /remove locks and tags accordingly during the scope of work. CGTA will assist Contractor in identifying the locations to perform the lock outs, but will not perform the actual lock out. Contractor shall supply and install their own locking devices and retain all keys during the scope of this work. Upon completion of all work the CGTA shall be in attendance when all locks/tags are removed.
6. The release hooks in the Lifeboat shall be disassembled for inspection. All locks, diaphragms, bushings, hooks, side plates, and releases shall be proven for Lloyd's inspection.
7. On completion of work, survey, and re-assembly, the davit assembly shall be both functionally tested alone, and then load tested using the lifeboat. A proper load test involves fully loading the Lifeboat to its weight capacity and includes hoisting the lifeboat aboard and stowing it in its resting position, lowering it to the water and then returning it to its stowed position. The Lifeboat shall be then lowered to a couple of inches off the water and the hook released to allow the lifeboat to drop into the water. While the Lifeboat is in the water, a buoyancy test shall be conducted. A Lloyd's Surveyor shall be present for all load / functional tests. All limit switches shall be proven functional. All weights shall be removed from the Lifeboat. Lifeboat shall be fully cleaned of any debris, dirt, or water and shall be stowed in its' davit.
8. All documentation shall be provided to demonstrate OEM compliance. No material substitutions shall be undertaken without the expressed written consent of Welin Lambie representative.
9. Contractor shall supply hand written notes, two (2) typewritten and one (1) electronic copy of all reports upon completion of the work, from the FSR prior to leaving the dry-dock. The report shall at a minimum list all work undertaken, repairs, parts used, measurements, readings, etc.

2.2 Location

1. Midship starboard side bridge deck.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

H-07 ANNUAL LIFEBOAT DAVIT INSPECTION

2.3 Interference

1. Contractor is responsible for the identification of any interference items, their temporary removal and storage and reinstallation in good order.
2. Contractor is responsible for protecting surrounding area and equipment while carrying out this work.

3: REFERENCES:

3.1 Guidance Drawings / Nameplate Data

Welin Lambie Rescue Boat Davit Type PIV 1.0A
DWG# - AF6098-O1201-1800-17_AF Rescue Boat Davit

Manual: - Welin Lambie Resue Boat Davit

3.2 Standards:

1. The following Coast Guard Standards and or Technical Bulletins shall be adhered to in the course of executing this specification. Copies of these standards and bulletins can be obtained from the CGTA.
 - Canadian Coast Fleet Safety Manual (DFO 5737)
 - Coast Guard ISM Lock Out/Tag Out Procedures

3.3 Allowances

1. Refer to section 2.1 General, subsection 2 above.

3.4 Owner Furnished Equipment

1. The contractor shall supply all materials, equipment and parts required to perform the specified work unless otherwise stated.

4: PROOF OF PREFORMANCE:

1. All documentation shall be provided to demonstrate OEM compliance.
2. Demonstrate operation to satisfaction of CGTA, FSR and Lloyd's Surveyor.

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H-07 ANNUAL LIFEBOAT DAVIT INSPECTION

PART 5: DELIVERABLES:

5.1 Drawings / Reports

1. Typewritten and electronic reports upon completion of all work from the FSR
2. Safety Management System forms and checklists
3. Lloyd's Survey credit.

5.2 Spares

1. N/A

5.3 Training

1. N/A

5.4 Manuals

1. N/A

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L-01 MULTI CABLE WIRE TRANSIT

1: SCOPE:

The intent of this specification item is for Contractor to repair the existing Multi Cable Wire Transit penetrations located in the watertight bulkheads found on the main engine compartment bulkhead and the bow thruster compartment bulkhead.

2: TECHNICAL DESCRIPTION:

2.1 General

1. Prior to any work commencing on the cable transits, all electrical cables shall be accessed to determine if they need to be isolated for the safety of the person performing the repairs.
2. There are a total of 4 wire transit penetrations covered in this specification that shall be addressed, all of which can be found below the Main Deck, Figure L-01-1 and L-01-2;
 - 1) One wire transit penetrations located in the deck head of the companion space to the main mechanical room, pictures 1A.



FORWARD COMPANION
SPACE - STARBOARD SIDE
LOOKING AFT



ENGINE ROOM SPACE -
STARBOARD SIDE **LOOKING
FORWARD**

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

L-01 MULTI CABLE WIRE TRANSIT

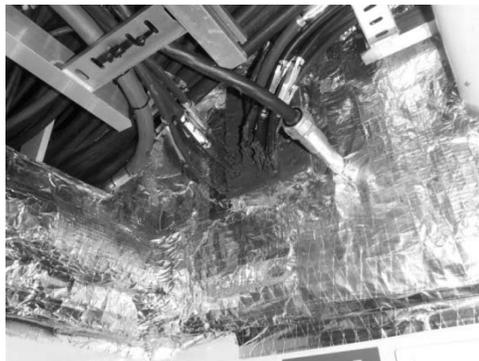
- 2) Two wire Transit penetrations located in the main control room on the aft bulk head. One port and one starboard toward the top corners of the bulk head, pictures 2A and 2B.



MAIN CONTROL ROOM
PORT SIDE LOOKING AFT



ENGINE ROOM SPACE
PORT SIDE LOOKING AFT



MAIN CONTROL ROOM
STARBOARD SIDE LOOKING
AFT

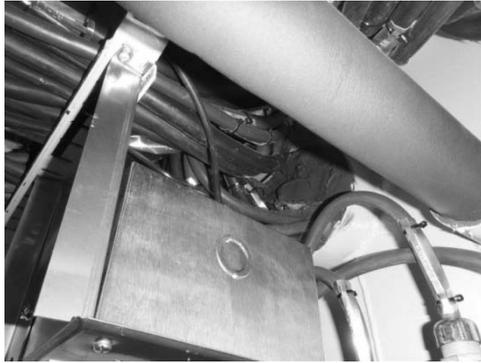


ENGINE ROOM SPACE
STARBOARD SIDE
LOOKING AFT

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

L-01 MULTI CABLE WIRE TRANSIT

- 3) One wire transit penetrations located at the bottom of the stairwell below the Main Deck on the aft bulk head, picture 3A.



STAIRWELL SPACE
STARBOARD SIDE LOOKING
FORWARD



ENGINE ROOM SPACE
STARBOARD SIDE LOOKING
AFT

- 4) One wire transit penetration located in the deck head above the door to the bow thruster compartment, picture 4A.



BOW THRUSTER SPACE
CENTRE LOOKING AFT



COMPANION SPACE
OUTSIDE BOW THRUSTER
SPACE CENTRE LOOKING
FORWARD

3. There are significant challenges due to interference items when working on the wire transit penetrations, Contractor is responsible for managing the interference items in order to complete the required repairs and provide a cost for their removal and reinstallation upon completion of each wire transit penetration. Cost shall form part of the overall bid price.

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L-01 MULTI CABLE WIRE TRANSIT

4. There is a detailed procedure for performing the repair in Appendix C, Contractor shall follow this procedure and provide an overall cost to perform the work on all transits identified in this statement of work.

Procedures are available in both written and video formats;

<http://www.csd.us.com/uploads/documents/NOFIRNO%20Cable%20Catalog%20Marine%20March%202010.pdf>

5. The existing Nofirno (Appendix B) sealant, filler sleeves and Rise insert sleeves shall be removed from each transit penetration and disposed of by Contractor. Contractor shall supply new Nofirno sealant, filler sleeves and Rise insert sleeves to properly repack all seven wire transit penetrations in this statement of work as per procedure in Appendix C.

Local Authorized distributor for Nofirno;

W&O Supply
(902) 481-7333
Contact: Dan Sawler

133 Ilsley Ave, Unit M
Dartmouth, NS,
B3B 1S9

6. Contractor shall provide the CGTA with an electronic copy and one type written copy of an inspection report on the work performed, condition of the wiring and any anomalies found during the initial start to completion of this work.

2.2 Location

1. Bulkhead in Main Engine Room space and bulkhead in Bow Thruster compartment,

2.3 Interference

3. Contractor is responsible for the identification of any interference items, their temporary removal and storage and reinstallation in good order.
4. Contractor is responsible for protecting surrounding area and equipment while carrying out this work.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

3: REFERENCES:

3.1 Guidance Drawings / Nameplate Data

<http://www.csd.us.com/uploads/documents/NOFIRNO%20Cable%20Catalog%20Marine%20March%202010.pdf>

Refer to Section 2.1 General, Subsection 2

3.2 Standards:

2. The following Coast Guard Standards and or Technical Bulletins shall be adhered to in the course of executing this specification. Copies of these standards and bulletins can be obtained from the CGTA.

- Canadian Coast Fleet Safety Manual (DFO 5737)
- Coast Guard ISM Lock Out/Tag Out Procedures

3.3 Allowances

1. N/A

3.4 Owner Furnished Equipment

1. The contractor shall supply all materials, equipment and parts required to perform the specified work unless otherwise stated.

4: PROOF OF PERFORMANCE:

1. All documentation shall be provided to demonstrate OEM compliance.
2. Demonstrate that the new packing is air tight to satisfaction of CGTA and the OEM representative (refer to Section 2.1 General, subsection 5).

PART 5: DELIVERABLES:

5.1 Drawings / Reports

1. Typewritten and electronic reports upon completion of all work from the FSR
2. Safety Management System forms and checklists
3. Lloyd's Survey credit.

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5.2 Spares

1. N/A

5.3 Training

1. N/A

5.4 Manuals

1. N/A

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DRYDOCKING & REFIT 2015

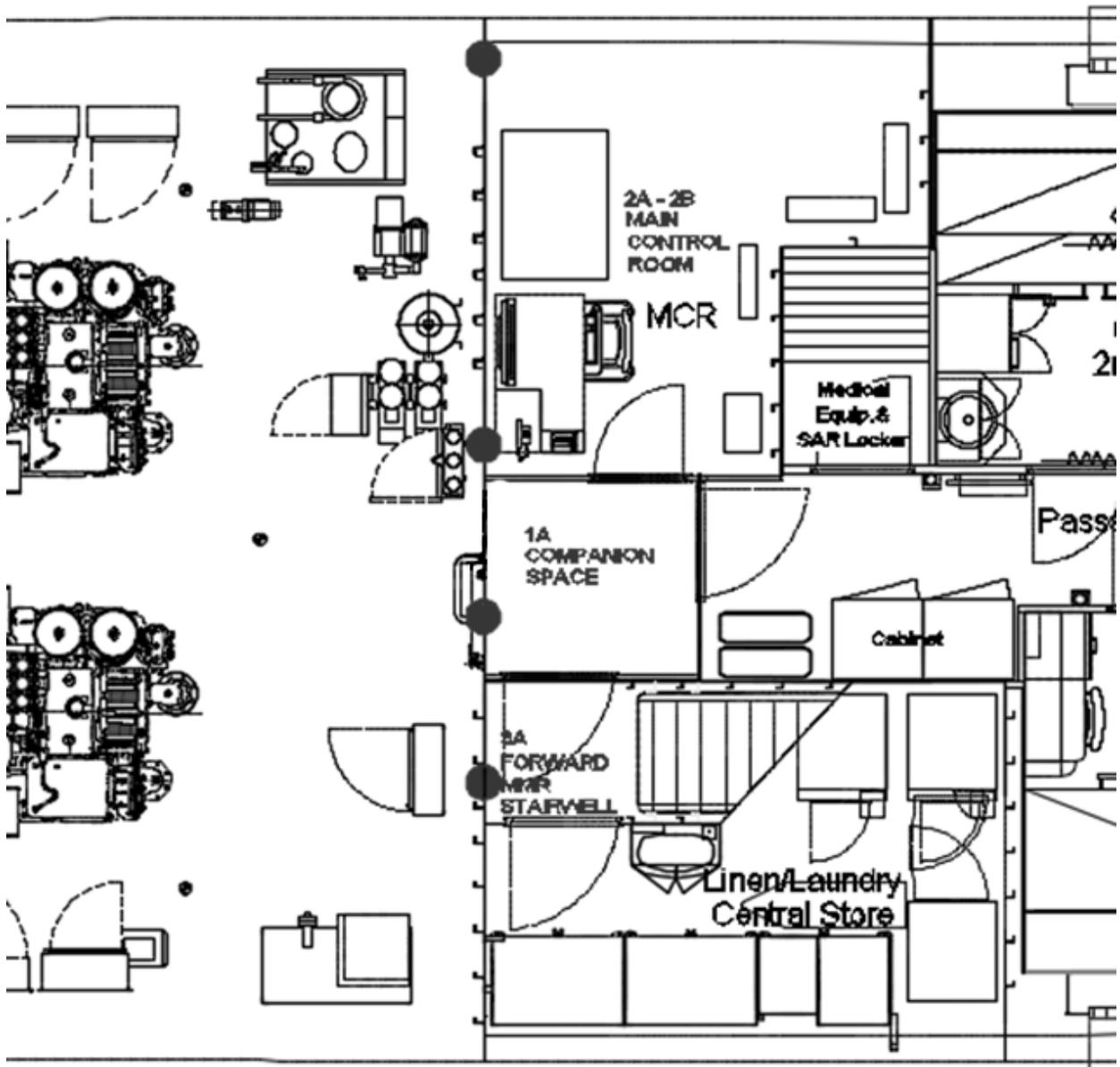


FIGURE L-01-1

CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015

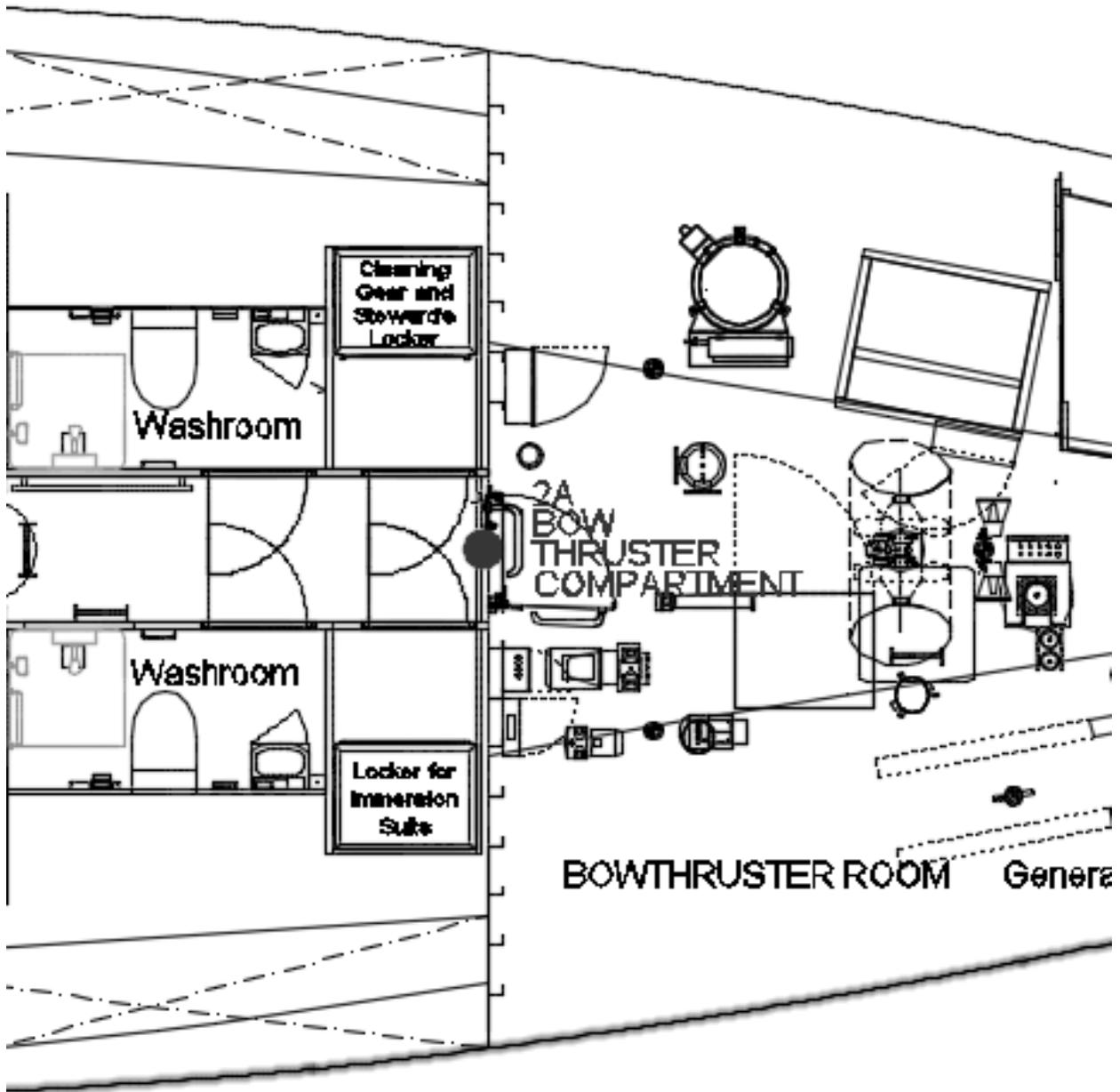


Figure L-01-2

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

L-02 ANNUAL MEGGAR READINGS

1: SCOPE:

The intent of this specification item is to complete the annual megger survey for the vessel as per regulatory requirement.

2: TECHNICAL DESCRIPTION:

2.1 General

1. Contractor shall carry out annual megger testing of all electrical panels and breakers listed in Appendix "D". Contractor shall not megger test circuits with either navigation equipment or electronic components. The generator breakers shall have their electronic components isolated before they are meggered.
2. Megger Testing shall be carried out within the first week of the vessel arriving at Contractors facility to allow sufficient time for repairs to any electrical system.
3. In regards to megger testing, motor circuits shall be tested in a two-step manner. Firstly, circuit is shall be tested between load side of circuit breaker and line side of motor starter; and secondly, between load side of starter and motor.
4. Any low readings or defects shall be brought to the attention of the CGTA as soon as possible. Repairs shall be carried out under PWGSC 1379 action.
5. Two typewritten copies and one electronic copy of the final results shall be given to CGTA upon completion.

Note: It is important that CGTA receive the report immediately upon completion of this specification item.

2.2 Location

1. Throughout the vessel

2.3 Interferences

1. Contractor is responsible for the identification of any interference items, their temporary removal and storage and reinstallation on the vessel.
2. Contractor is responsible for protecting surrounding area and equipment while carrying out this work

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

L-02 ANNUAL MEGGAR READINGS

3: REFERENCES:

3.1 Guidance Drawings/Nameplate data

1. See Appendix "D"

3.2 Standards and Regulations

1. TP127E latest edition.
2. Canada Shipping Act 2001 - Machinery Inspection Regulations

3.3 Allowances

1. N/A

3.4 Owner Furnished Equipment

1. N/A

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. Contractor shall ensure the functionality of all equipment disassembled for insulation testing following the completion of the vessels electrical system insulation test and prior to the end of the contract period.

4.2 Testing

1. Testing of the equipment shall be performed in the presence of the CGTA.

4.3 Certification

1. N/A

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

L-02 ANNUAL MEGGAR READINGS

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. The Contractor must provide to the CGTA:

- Copies of the ship's megger report in electronic format as well as two typewritten copies.
- Updated reports for any circuits and/or deficiencies corrected with 1379 action.
- Copies of the survey credit for the inspection and meggering of the vessel's electrical circuits.

2. The Contractor must provide to the Lloyd's Surveyor:

- Copy of the updated Megger Report to obtain Survey Credit.

3. The Contractor must provide to the CGTA;

- Copy of the updated Megger report within 24 hours of completion of the work and two weeks prior to completion of the refit.

5.2 Spares

1. N/A

5.3 Training

1. N/A

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

APPENDIX A

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**



SPECIFICATION - ADDITION
OF LIMBER HOLES IN MAIN
ENGINE ROOM

CCGS G PEDDLE

CANADIAN COAST GUARD



| | |
|-----------|-------------|
| BY: | CR |
| APPVED: | TH |
| DATE: | 09/04/2015 |
| REVISION: | 0 |
| PROJECT#: | 15069 |
| DOC #: | 800-SPC-001 |

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Fax: +1-709-747-2778

Internal Ref: FT009, Sept 2013

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

15069-800-SPC-001 - Rev 0

CCGS G PEDDLE

Revision Table

| Rev # | Date | Change Description | By: | Chked: |
|-------|------------|---------------------|-----|--------|
| 0 | 04/09/2015 | ORIGINAL SUBMISSION | CR | TH |
| | | | | |
| | | | | |
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CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

15069-800-SPC-001 - Rev 0

CCGS G PEDDLE

TABLE OF CONTENTS

| | | |
|------------|--|---|
| 1 | Specification..... | 1 |
| 1.1 | Scope of Work..... | 1 |
| 1.2 | Background..... | 1 |
| 2 | Reference Documents..... | 1 |
| 2.1 | Drawings and Documents..... | 1 |
| 3 | Technical Description | 1 |
| 3.1 | Functional and Design Requirements | 1 |
| 3.2 | Acceptance Criteria..... | 2 |
| 3.3 | Equipment Components and Materials..... | 2 |
| 4 | Inspections, Tests & Trials..... | 4 |
| 4.1 | General | 4 |
| Appendix A | References | 5 |
| Appendix B | Photos | 6 |

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

15069-800-SPC-001 - Rev 0

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1 SPECIFICATION

1.1 SCOPE OF WORK

1.1.1 *MAIN ENGINE ROOM*

The Contractor is to perform all strip-out, fabrication and installation work required to meet the modifications to the Main Engine Room in accordance with the references listed in Section 2.0 and the Technical Description as detailed in Section 3.

1.2 BACKGROUND

A survey of the workboat engine rooms has shown an issue with respect to bilge drainage.

1.2.1 *MAIN ENGINE ROOM*

In the Main Engine Room, the bilge water was observed to collect in the longitudinal direction along the outboard side of the main engine girders (port and starboard) from approximately frame 11 to 17. On closer examination these outboard girders do not have any limber holes (rat holes) in the athwartship direction. This means that any water collecting outboard of these girders will not be able to drain to the bilge suctions underneath each main engine. There is a requirement to make a number of limber holes along the outboard side of the main engine girder webs between frames 13 to 15. It should be noted that access to the space where the limber holes are to be installed is very restricted and narrow.

2 REFERENCE DOCUMENTS

2.1 DRAWINGS AND DOCUMENTS

- A. Irving Shipyard Inc. Drawing No. AF6099-52000-01 Rev AF – CCGS Corporal McLaren M.M.V. – Bilge Drainage and Dewatering System.
- B. Irving Shipyard Inc. Drawing No. AF6099-20000-01 Rev AF – CCGS Corporal McLaren M.M.V. – Engine Room Arrangement.
- C. Allswater Structural Drawing No. 15069-800-S-001 – Main Engine Room Limber Hole Additions. (See Appendix A)

3 TECHNICAL DESCRIPTION

3.1 FUNCTIONAL AND DESIGN REQUIREMENTS

The Contractor will fabricate and/or supply the installation components in accordance with the drawings and guidance notes referenced in Section 2.0.

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15069-800-SPC-001 - Rev 0

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3.2 ACCEPTANCE CRITERIA

The Contractor shall ensure that all steel work and removals are within accepted tolerances. The Contractor shall ensure that, after the verification of the installation, all stripped out piping, supporting structure, walkways and walkway frames will be returned to the as found condition.

3.3 EQUIPMENT COMPONENTS AND MATERIALS

3.3.1 *GENERAL*

In addition to the acceptance criteria of section 3.2, the Contractor shall ensure that all bilges and spaces within the Main Engine room are to be dry, clean and certificates provided for gas freed spaces prior to any hot work and appropriate fire watches are placed. The pipe sections to be removed are to be isolated, drained and tagged within the appropriate system before removal.

As noted in section 3.2, the Contractor shall ensure that, after verification of the modification, any disturbed steelwork, piping, wire conduit, electrical wiring and/or wire fastenings, paint coatings will be returned to the as found condition. All new steelwork, piping, and wire conduit are to be primed and painted with marine paint (two coats).

All items removed and identified as items to be re-installed are to be tagged and safely stored for re-installation. The Contractor is to ensure that all new pipes are to be appropriately identified, recorded and "tagged".

Equipment components and material to be removed and installed are listed in the following sections.

3.3.2 *REMOVAL*

3.3.2.1 MAIN ENGINE ROOM STRIP-OUT – STARBOARD

The Contractor shall remove, as a minimum, the following material [Photo 1, 2 & 3] from the outboard side of the starboard engine support girder:

- Steel floor plate and floor support structure b/w frame 13 to 16. To be retained for reinstallation.
- All piping (2" Nom. Dia.) and supports associated with the Sea Water Cooling Line pipe b/w frame 13 to 14. Flanged pipe shall be retained for reinstallation. (Appendix B – Photo #1 - Line #3)

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15069-800-SPC-001 - Rev 0

CCGS G PEDDLE

- All piping (1" Nom. Dia.) and supports associated with the Main Engine Pre-Heat Line pipe b/w frame 13 to 14. Flanged pipe shall be retained for reinstallation. (Appendix B – Photo #1 – Line #4)
- All piping (3" Nom. Dia.) and supports associated with the Seawater Cooling Line pipe b/w frame 13 to 14. Flanged pipe shall be retained for reinstallation. (Appendix B – Photo #1 – Line #5)
- All piping (3/4" Nom. Dia.) and supports associated with the Main Engine Pre-Lube Line pipe b/w frame 13 to 14. Flanged pipe shall be retained for reinstallation. (Appendix B – Photo #1 – Line #1)
- All piping (1 1/4" Nom. Dia.) and supports associated with the Main Engine Pre-Lube Line pipe b/w frame 13 to 14. Flanged pipe shall be retained for reinstallation. (Appendix B – Photo #1 – Line #2)
- All piping (3" Nom. Dia.) and supports associated with the Seawater Cooling Line pipe b/w frame 13 to 14. This pipe will need to be cut out. (Appendix B – Photo #1 & 2 – Line #6)
- All piping (3" Nom. Dia.) and supports associated with the Seawater Cooling Line pipe b/w frame 14.5 to 15.5. Flanged pipe shall be retained for reinstallation. (Appendix B – Photo #3 – Line #6 continued)

If new material is required the Contractor shall supply.

3.3.2.2 MAIN ENGINE ROOM STRIP-OUT – PORT

The Contractor shall remove, as a minimum, the following material [Photo 4 & 5] from the outboard side of the port outboard engine support girder:

- Steel floor plate and floor support structure b/w frame 13 to 15. To be retained for reinstallation.
- Two (2) Battery packs, battery pack securing frame, steel floor plate and floor support structure b/w frame 13 to 15. To be retained for reinstallation.

3.3.3 INSTALLATION

3.3.3.1 MAIN ENGINE ROOM – STARBOARD

The Contractor shall install three (3) limber holes through the web of the outboard main engine girder. The limber holes are to be drilled through the girder web with the use of a Magnetic Drill. Each limber hole shall be located as specified in Drawing 15058-800-S-001. (See Appendix A) Care shall be taken to protect the shell plating IWO each new limber hole.

The Contractor shall re-install, all items saved for re-installation. These are:

- Steel floor plate and floor support structure b/w frame 13 to 16.
- All piping (2" Nom. Dia.) and supports associated with the Sea Water Cooling Line pipe b/w frame 13 to 14. (Appendix B – Photo #1 – Line #3)

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15069-800-SPC-001 - Rev 0

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- All piping (1" Nom. Dia.) and supports associated with the Main Engine Pre-Heat Line pipe b/w frame 13 to 14. (Appendix B – Photo #1 - Line #4)
- All piping (3" Nom. Dia.) and supports associated with the Seawater Cooling Line pipe b/w frame 13 to 14. (Appendix B – Photo #1 - Line #5)
- All piping (3/4" Nom. Dia.) and supports associated with the Main Engine Pre-Lube Line pipe b/w frame 13 to 14. (Appendix B – Photo #1 - Line #1)
- All piping (1 1/4" Nom. Dia.) and supports associated with the Main Engine Pre-Lube Line pipe b/w frame 13 to 14. (Appendix B – Photo #1 - Line #2)
- All piping (3" Nom. Dia.) and supports associated with the Seawater Cooling Line pipe b/w frame 13 to 14. (Appendix B – Photo #1 & 2 - Line #2) New piping will need to be installed. Connections will be flanged.
- All piping (3" Nom. Dia.) and supports associated with the Seawater Cooling Line pipe b/w frame 14.5 to 15.5. (Appendix B – Photo #3 - Line #6 continued)

If new material is required, the Contractor shall supply. There will be a requirement to flange pipes which have been cut to gain access to the foundation. The contractor shall identify the piping systems requiring such treatment.

3.3.3.2 MAIN ENGINE ROOM – PORT

The Contractor shall install three (3) limber holes through the web of the outboard main engine girder. The limber holes are to be drilled through the girder web with the use of a Magnetic Drill. Each limber hole shall be located as specified in Drawing 15058-800-S-001. (See Appendix A)

The Contractor shall re-install, all items saved for re-installation. These are:

- Steel floor plate and floor support structure b/w frame 13 to 15.
- Two (2) Battery packs, battery pack securing frame, steel floor plate and floor support structure b/w frame 13 to 15.

If new material is required the Contractor shall supply.

4 INSPECTIONS, TESTS & TRIALS

4.1 GENERAL

The testing of the new systems will be conducted by the Contractor. The trialing of the systems will be determined by Owner. The inspection and approval of the new limber holes will be by the technical authorities. All piping systems which were removed to provide access to the engine foundation and then reinstalled shall be trialed.

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15069-800-SPC-001 - Rev 0

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Appendix A **REFERENCES**

1. Allswater Structural Drawing No. 15069-800-S-001 – Main Engine Room Limber Hole Additions.

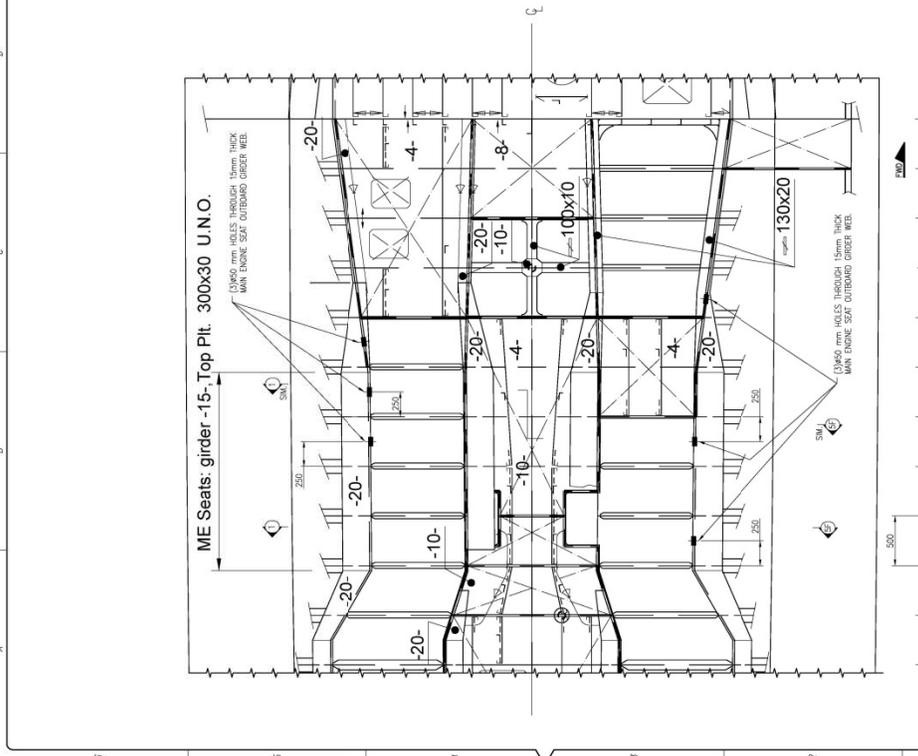
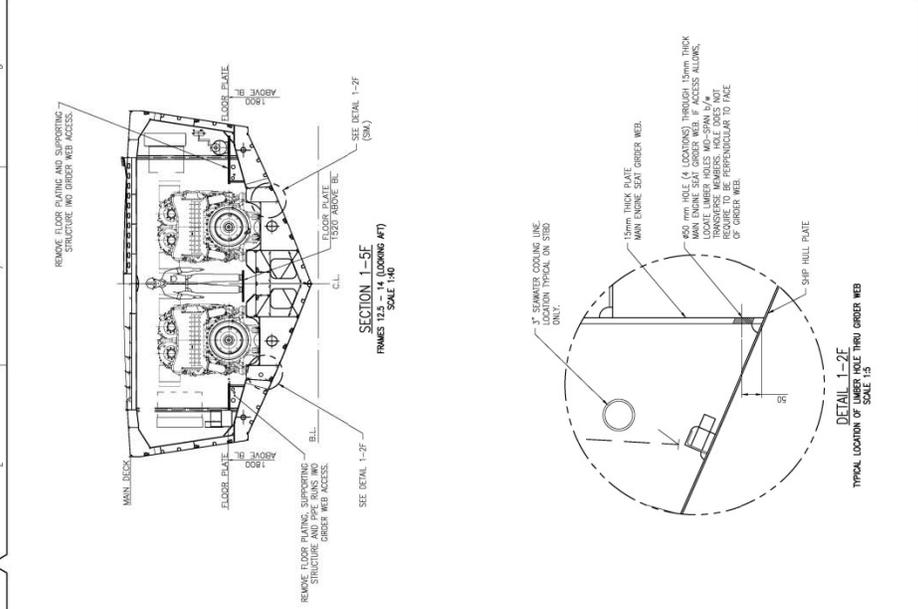
CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

GENERAL NOTES:

1. THE CONTRACTOR SHALL ENSURE THAT ALL BULGES AND SPACES WITHIN THE ENGINE ROOM ARE TO BE REMOVED AND REWORKED AS NECESSARY. ALL GAS FRIED SPACES PRIOR TO ANY HOT WORK AND APPROPRIATE FIRE WATCHES ARE TO BE PLACED TO ISOLATE AND BRANDED WITHIN THE APPROPRIATE SYSTEM BEFORE REMOVAL.
2. ALL STEELWORK TO BE REMOVED SHALL BE IDENTIFIED BY THE CONTRACTOR AND RECORDED IN THE APPROPRIATE LOG.
3. ALL NEW STEELWORK, PIPING, AND WIRE CONDUIT SHALL BE IDENTIFIED BY THE CONTRACTOR AND RECORDED IN THE APPROPRIATE LOG.
4. ALL NEW STEELWORK, PIPING, AND WIRE CONDUIT SHALL BE IDENTIFIED BY THE CONTRACTOR AND RECORDED IN THE APPROPRIATE LOG.
5. ALL ITEMS REMOVED AND IDENTIFIED AS ITEMS TO BE REWORKED SHALL BE FACED AND SAFETY COATED TO PREVENT CORROSION. ALL NEW PIPES ARE TO BE IDENTIFIED BY THE CONTRACTOR AND RECORDED IN THE APPROPRIATE LOG.

PREFERENCES:

1. BRANK SURROUNDING DRAWING: #R909-10000-02
2. BRANK SURROUNDING DRAWING: #R909-20000-01
3. BRANK SURROUNDING DRAWING: #R909-20000-01



ALLSWATER

CCGS G PEDDLE
TITLE: MAIN ENGINE ROOM -
LIMBER HOLE ADDITIONS

DATE: 06/20/2015 SHEET: 1 OF 1

SCALE: AS SHOWN

ISSUED: 06/20/2015

DRAWN BY: J. TH

CHECKED BY: CR

PROJECT NO: 15069-800-S-001

AT: AUTUMN 2014

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

15069-800-SPC-001 - Rev 0

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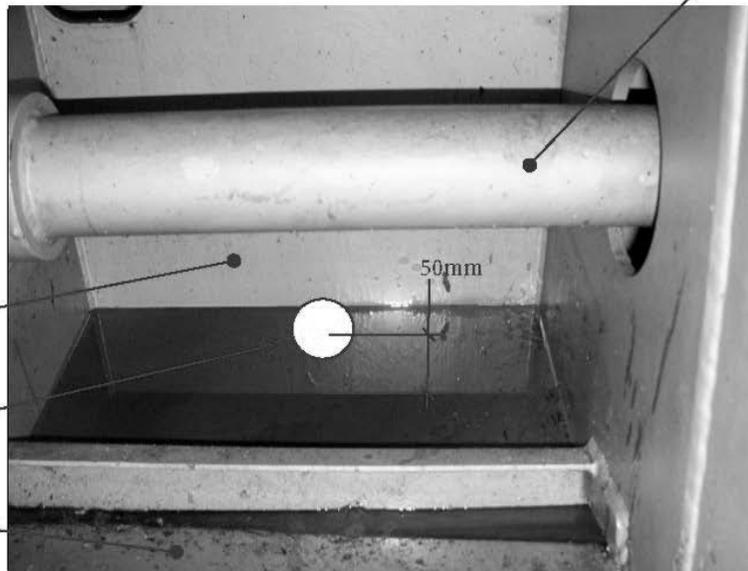
Appendix B **PHOTOS**

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015



- PIPING TO BE REMOVED
1. MAIN ENGINE PRE-LUBE (3/4")
 2. MAIN ENGINE PRE-LUBE (1 1/4")
 3. SEAWATER COOLING LINE (2")
 4. MAIN ENGINE PRE-HEAT LINE (1")
 5. SEAWATER COOLING LINE (3")
 6. SEAWATR SUPPLY TO FIRE PUMP/BILGE LINE (3")

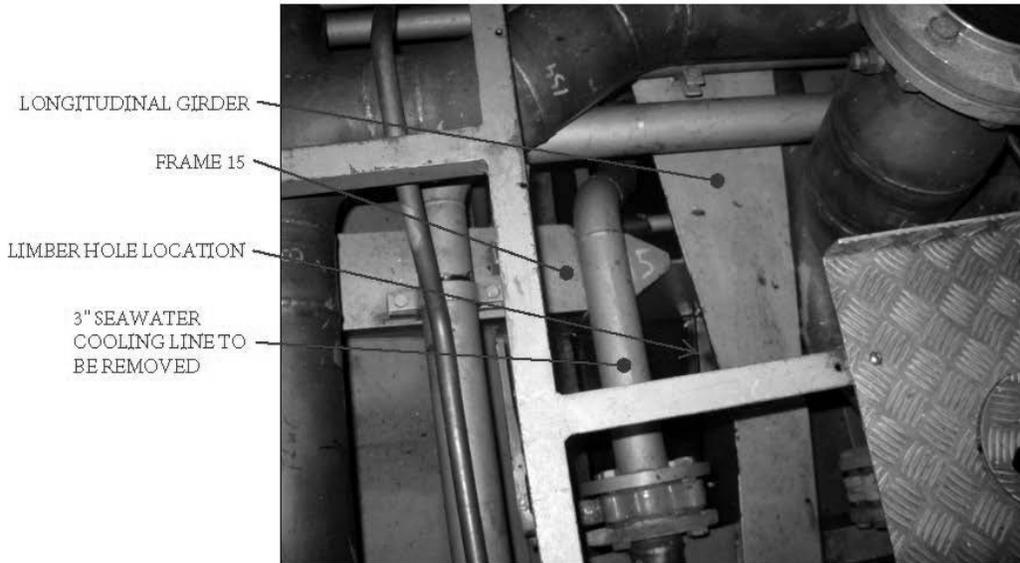
1. Main Engine Room - Outboard view of Stbd engine (looking aft). Piping to be removed IWO access to outboard web-face of engine support girder.



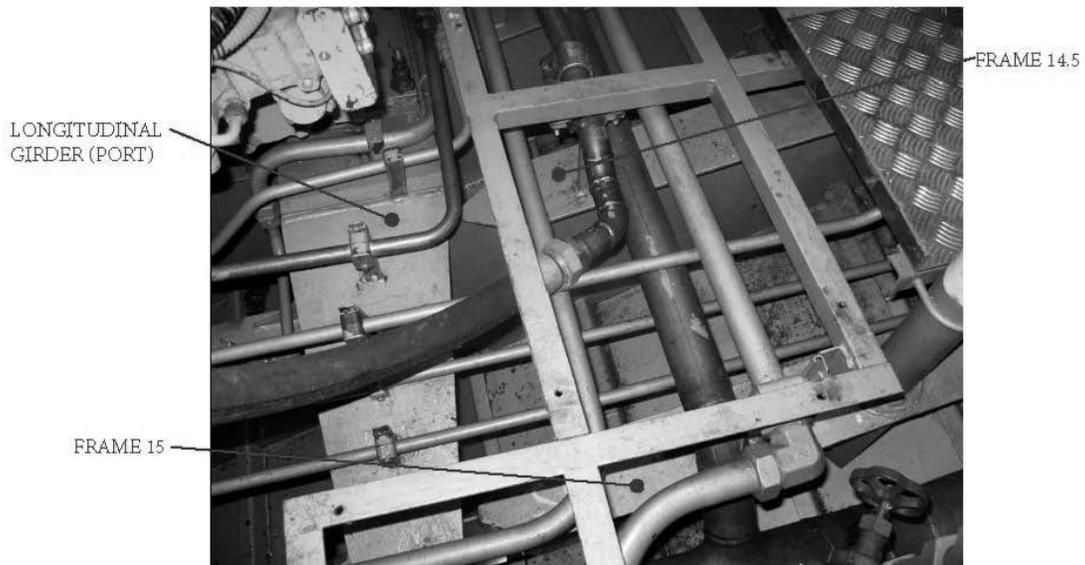
- GIRDER WEB
- Ø50 mm LIMBER HOLE THROUGH GIRDER WEB (TYP)
- SHIP HULL

2. Main Engine Room - View of standing water against outboard engine support girder (Stbd) b/w transverse frames 13 & 13.5 (looking port). 3" Seawater Cooling pipe in foreground to be removed to gain working access to girder web.

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015



3. Main Engine Room - View of outboard engine support girder (Stbd) & frame 15 (looking aft). 3" Seawater Cooling pipe in foreground to be removed to gain working access to girder web.



4. Main Engine Room - View of outboard (Port) engine support girder (looking aft).

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015

TO BE REMOVED b/w
FRAMES 13 - 15



5. Main Engine Room - View of outboard (Port) engine support girder. Battery packs, steel floor plate and floor support structure to be removed.

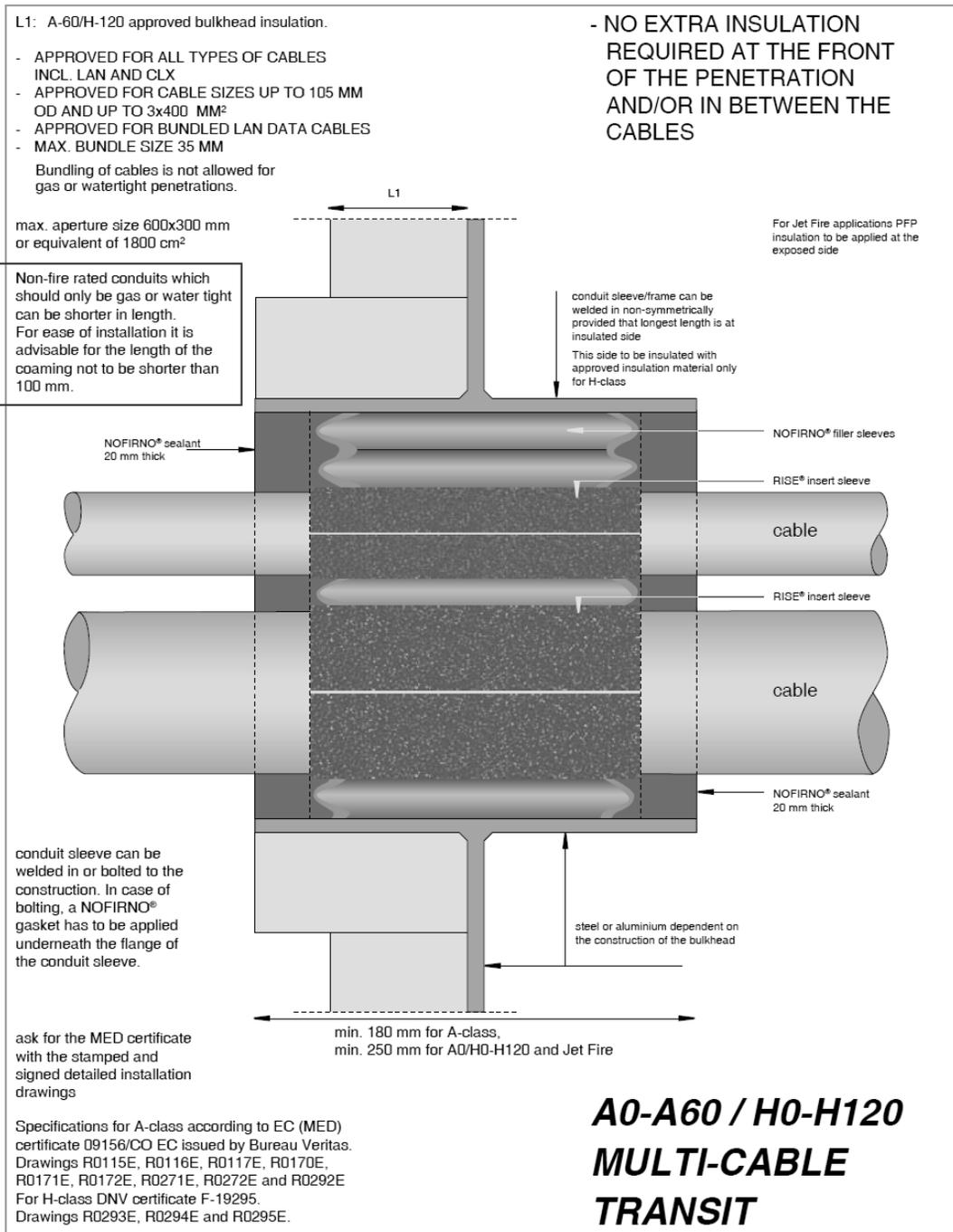
**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

APPENDIX B

CCGS G PEDDLE SC DRYDOCKING & REFIT 2015



NOFIRNO® MULTI-CABLE TRANSIT SEALING SYSTEM



CCGS G PEDDLE SC DRYDOCKING & REFIT 2015



NOFIRNO® MULTI-CABLE TRANSIT SEALING SYSTEM

L1: A-60/H-120 approved deck insulation.

- APPROVED FOR ALL TYPES OF CABLES INCL. LAN AND CLX
- APPROVED FOR CABLE SIZES UP TO 105 MM OD AND UP TO 3x400 MM²
- APPROVED FOR BUNDLED LAN DATA CABLES
- MAX. BUNDLE SIZE 35 MM

Bundling of cables is not allowed for gas or watertight penetrations.

max. aperture size 600x300 mm or equivalent of 1800 cm²

- NO EXTRA INSULATION REQUIRED AT THE FRONT OF THE PENETRATION AND/OR IN BETWEEN THE CABLES

NOFIRNO® sealant 20 mm thick

NOFIRNO® filler sleeves

NOFIRNO® sealant 20 mm thick

RISE® insert sleeve

cable

cable

RISE® insert sleeve

steel or aluminium dependent on the construction of the deck

L

L1

NOFIRNO® sealant 20 mm thick

NOFIRNO® filler sleeves

NOFIRNO® sealant 20 mm thick

RISE® insert sleeve

RISE® insert sleeve

cable

cable

steel or aluminium dependent on the construction of the deck

L

L1

conduit sleeve/frame can be welded in non-symmetrically from totally below deck to totally above deck

ask for the MED certificate with the stamped and signed detailed installation drawings

L= min. 180 mm for A-class,
L= min. 250 mm for A0/H0-H120 and Jet Fire

ask for the MED certificate with the stamped and signed detailed installation drawings

Non-fire rated conduits which should only be gas or water tight can be shorter in length.
For ease of installation it is advisable for the length of the coaming not to be shorter than 100 mm.

ask for the MED certificate with the stamped and signed detailed installation drawings

Specifications for A-class according to EC (MED) certificate 09156/CO EC issued by Bureau Veritas. Drawings R0115E, R0116E, R0117E, R0170E, R0171E, R0172E, R0271E, R0272E and R0292E. For H-class DNV certificate F-19295. Drawings R0293E, R0294E and R0295E.

A0-A60 / H0-H120 MULTI-CABLE TRANSIT

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

APPENDIX C

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

**NOFIRNO[®] Multi-Cable Transits
Repair Procedures For
Canadian Coast Guard Vessels**

OVERVIEW:

The NOFIRNO Cable Transit System was installed in several cable penetrations on various Canadian Coast Guard vessels. These penetrations transition fire-rated and watertight bulkheads, which require the cable transit sealing system to maintain the fire-rating and watertight integrity of the bulkheads/decks through which they transition. Inspection of the cable transit installations has identified the fact that the workmanship on the installation of these transits was sub-par, and as a result, these NOFIRNO penetrations may not be maintaining the required fire-rating and watertight integrity. Observation by Richard Casale, President of Beele/CSD North America, has determined that in most (if not all) transits, sufficient space was available to spread the cables out evenly within the transit. This determination shows that the transits were not “over packed”, which eliminates the need to cut additional transits and re-route cables. The following will outline the manufacturer’s recommended repair procedures to the NOFIRNO Cable Transit penetrations on these Coast Guard Vessels.

Removal of existing NOFIRNO Materials:

- A proper repair to the transits must begin with removal of the existing NOFIRNO sealant. Although cured at this point, the sealant can be cut away and removed with the proper tools, labor and detailed workmanship. A variety of tools may be necessary to remove enough of the sealant to create a transit that can then be re-installed properly. The tools must be able to cut the sealant layer, but must not be sharp enough to cut into a cable jacket. Tools to consider may include (but are not limited to) an Arch Punch, curved/serrated “Grapefruit Knife”, regular and needle-nose pliers, and a putty knife for scraping.
- Prior to starting the removal process of the sealant, any cable ties that are securing the cables should be loosened or removed (whenever possible) to allow better accessibility to the cables and face of the transit.
- Start by using the Grapefruit Knife to cut the sealant bond along the inner surface of the collar. The knife should be inserted deep enough so that the end of the knife hits the end of the filler sleeves that should have been installed inside the middle of the transit. Once the perimeter has been cut, attention should then be focused on any larger “void spaces” in the face of the transit. In other words, focus on the larger areas that have no cable. Additional cuts can be made around the perimeter of these void areas, creating larger areas of sealant that can then be removed. It may be necessary to work the knife behind the cured sealant in order to break the bond between the sealant and the ends of the filler sleeves.

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- At this point, it may be helpful to move to the opposite end of the transit collar (on the other side of the bulkhead/deck) to remove the larger areas of sealant on that side. Once this is accomplished, the filler sleeves can then be pulled out of the transit by using a pair of pliers. The end result should be empty spaces in which the cables can then be moved to while removing the sealant and insert sleeves from around the cables.
- Once all of the larger areas of sealant have been removed, focus should now be on removing the sealant and insert sleeves from around the cables. This will be a slow, methodical process, and will be impacted by accessibility to the transit as well as the loosening (if possible) of the cable ties. The sealant should be cut away from the cables one-by-one, starting with the cables closest to the void space which was created by removal of the sealant and filler sleeves. Once the sealant bond has been cut from around the entire perimeter of a cable, the cable should then be moved as much as possible into the void space. The use of a strap, string, or some other means to hold the cable away from the remaining cables should be considered. This will facilitate removal of the sealant from the remaining cables.
- The sealant should be cut (with the grapefruit knife) or scrapped off of the cable jacket (with the putty knife) as best as possible, and the RISE insert sleeve around the cable (if there is one), should then be removed. This will have to be done from both ends of the transit collar. **NOTE:** It is not imperative to remove all of the sealant from the cable jackets. Just removing the bulk of the sealant will be sufficient. The sealant has an auto-bonding property, whereby any new sealant will bond itself to the existing, cured sealant. Regardless, it will be best to remove as much of the sealant as possible from the jackets of the cables.
- Once the above steps have been undertaken and accomplished, the transit should now be at a stage where it can be re-packed. Wherever possible, the cables should remain spread out within the transit to ensure proper accessibility, and to maintain proper spacing between the cables by the application of a RISE insert sleeve around each cable. This will ensure that the watertight integrity of the transit is achieved and maintained.
- The normal installation procedures for the NOFIRNO Cable Transit system should now be undertaken. These procedures are available in both written and video formats – internet link below.

<http://www.csd.us.com/uploads/documents/NOFIRNO%20Cable%20Catalog%20Marine%20March%202010.pdf>

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- **NOTE:** Once the cables have been repositioned, any cable ties that were loosened should be retightened **PRIOR** to application of the NOFIRNO sealant. The cables can and should remain loose while installing the RISE Insert Sleeves and NOFIRNO filler sleeves, in order to maximize accessibility.



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APPENDIX D

**CCGS G PEDDLE SC
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PANEL E-2 DISTRIBUTION PANEL 120 VOLT

MEGGER AT 50 V

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|--|
| E2-1 | SECURITY DEVICE(SCIP) |
| E2-2 | SPARE |
| E2-3 | POWER SUPPLY FOR WIPER CONTROL SYSTEM |
| E2-4 | SPARE |
| E2-5 | ECHO SOUNDER PROCESSOR DISPLAY AND PRINTER |
| E2-6 | SONAR ASSEMBLY |
| E2-7 | SPEED LOG |
| E2-8 | OPEN DECK AREA BRIDGE DECK LIGHTING |
| E2-9 | FAX MACHINE CHART TABLE LIGHTING |
| E2-10 | SOCKET FOR CHARGERS, PORTABLE RADIO TELEPHONE |
| E2-11 | SPARE |
| E2-12 | CHARGER FOR AUTOMATIC VOLUNTARY OBERVATION SHIPS (AVOS) |
| E2-13 | SOCKET 115 VOLT 15 AMP TOP DECK RADAR ANTENNAE |
| E2-14 | STAIR FR. 14 TOP DECK SOCKETS FOR PORTABLE FLOODLIGHTS |
| E2-15 | CHART LAMP, RED LIGHT BRIDGE AND COMMAND CENTRE |
| E2-16 | EMERGENCY LIGHT BRIDGE / COMMAND CENTRE |
| E2-17 | SPARE |

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| | |
|--------------|--|
| E2-18 | SCANNER CONTROL UNIT ANTENNAE S-BAND |
| E2-19 | SPARE |
| E2-20 | ELECTRIC WHISTLE |
| E2-21 | STBD, CENTRE, AND PORT HEATED FRONT WINDOWS |
| E2-22 | SOCKET FOR DAY SIGNALLING LAMP |
| E2-23 | PORT WING CONSOLE HEATER |
| E2-24 | STBD WING CONSOLE HEATER |
| E2-25 | AIR GROUND VHF TRANSCEIVER |
| E2-26 | CCTV CONTROL STATION / MONITOR BRIDGE |
| E2-27 | SPARE |
| E2-28 | POWER SUPPLY UNIT MF / HF RADIO TELEPHONE |
| E2-29 | FRONT CENTRE WINDOW WIPER CONTROLS (3 PHASE) |
| E2-30 | LOUD HAILER |
| E2-32 | SPARE |
| E2-33 | PORT AND STBD WINDOW WIPER CONTROLS (3 PHASE) |
| E2-34 | PORT, CENTRE, AND STBD HEATED FRONT WINDOWS |
| E2-35 | SOCKET-BRIDGE WING CONSOLES |
| E2-36 | SOCKET-MCR CONSOLE |

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PANEL E-1 EMERGENCY DISTRIBUTION 120 VOLT

MEGGER AT 100V

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|---|
| E1-01 | SOCKET FOR ECHO SOUNDER TRANSCIEVER ARR. IN EER, FRS. 25-26 STBD |
| E1-02 | JUNC. BOX FOR CCTV POWER OVER ETHERNET ADAPTERS ARR. IN EER FRS. 25-26 STBD |
| E1-03 | SOCKET FOR E-MAIL AT SEA EQUIPMENT ARR. IN EER FRS. 23-24 STBD |
| E1-04 | BRIDGE ELECTRONIC CHART SYSTEM (JB) ARR. IN BRIDGE FR. 22 STBD |
| E1-05 | RADAR "X" BAND ISOLATION SWITCH ARR. ON TOP OF BRIDGE DECK FR. 15 PORT |
| E1-06 | RADAR "S" BAND TRANSCIEVER AND UPS FOR RADAR STATION UNIT #3 COMMAND CENTRE FR. 18 |
| E1-07 | SPARE |
| E1-08 | SOCKET FOR CCTV CONTROLLER ARR. IN EER FR. 24 STBD |
| E1-09 | SPARE |
| E1-10 | FIRE DETECTION CONTROL UNIT ARR. IN BRIDGE FRS. 18-19 PORT |
| E1-11 | GYRO COMPASS INTERFACE AND POWER SUPPLY UNIT ARR. IN BRIDGE FRS. 25-26 STBD. |
| E1-12 | SOCKET FOR MCR PRINTER |
| E1-13 | SEARCHLIGHT FRS. 21 PORT TOP OF BRIDGE |
| E1-14 | SAT. CONNECTIVITY ADAPTER 4 PORT ARR. IN COMMAND CENTRE, FRS. 16-17 PORT, SAT. CONNECTIVITY ADAPTER 8 PORT ARR. IN BRIDGE FRS. 19-20 PORT |

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| | |
|--------------|--|
| E1-15 | INDIVIDUAL STARTER FOR EMERGENCY GENERATOR COMPT FAN |
| E1-16 | RECTIFIER FOR BATTERY BACK-UP SYSTEM |
| E1-17 | SPARE |
| E1-18 | SPARE |
| E1-19 | ELECTRONIC CHART SYSTEM (JB) ARR. IN COMMAND CENTRE, FR. 16 STBD |
| E1-20 | ELECTRONIC CHART SYSTEM DISPLAY ARR. IN BRIDGE WING CONSOLE, FR. 22 PORT |
| E1-21 | ELECTRONIC CHART SYSTEM DISPLAY ARR. IN BRIDGE WING CONSOLE, FR. 22 STBD |
| E1-22 | SPARE |
| E1-23 | UPS FOR LAN ARR. IN EER FR. 23-24 STBD |
| E1-24 | DOUBLE SOCKET FOR CELLULAR PHONE TRANSCIEVER AND AMPLIFIER ARR. IN COMMAND CENTRE FR. 17 PORT |
| E1-25 | SEATEL DOME HEATER |
| E1-26 | SOCKET FOR RADIO COMMUNICATION RACK ARR. IN EER, FR. 24 STBD |
| E1-27 | SOCKET FOR RADIO COMMUNICATION RACK ARR. IN EER, FR. 17-18 STBD |
| E1-28 | REMOTE RADAR STATION UNIT #2 ARR. IN COMMAND CENTRE FR. 16 STBD |
| E1-29 | SPARE |
| E1-30 | HEATER FOR SOUND POWERED TELEPHONE (JB) ARR. IN MESSROOM FR. 21 |
| E1-31 | RED FLASHING BEACON FOR GENERAL ALARM SYSTEM ARR. IN BOW THRUSTER ROOM, FR. 34 |

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**E1-32 FLASHING BEACON FOR AUTOMATIC TELEPHONE (JB) ARR. IN
EMERGENCY GENERATOR COMPARTMENT, FR. 15 STBD**

**E1-33 SHORE CONNECTION BOX FOR AUTOMATIC TELEPHONE ARR. IN
HVAC ROOM FR. 32 PORT**

E1-34 BATTERY LOCKER HEATER ARR. ON BRIDGE DECK FR.24 CL

E1-35 SPARE

E1-36 SPARE

E1-37 SPEED LOG PRE-AMP

E1-38 SPARE

E1-78 ICIC3 UPS

**CCGS G PEDDLE SC
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EMERGENCY GENERATOR DISTRIBUTION 240 VOLT

MEGGER AT 500V range

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|------------------------------|
| 2Q24 | ME STBD PRE-LUBRICATING PUMP |
| 2Q25 | ME PORT PRE-LUBRICATING PUMP |
| 2Q26 | IICS MAIN CABINET (ATS) |
| 2Q27 | EMER DG ROOM ACTUATORS |
| 2Q28 | COLD ROOM COMPRESSOR # 1 |
| 2Q29 | COLD ROOM COMPRESSOR # 2 |
| 2Q30 | S.W. COOLING PUMP |
| 2Q31 | SPARE |
| 2Q32 | SPARE |

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EMERGENCY GENERATOR DISTRIBUTION 120 VOLT

MEGGER AT 500V

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|--|
| 3Q01 | EMERGENCY DISTRIBUTION PANEL E2 |
| 3Q02 | EMERGENCY DISTRIBUTION PANEL E1 |
| 3Q03 | RECTIFIER FOR AUTOMATION UPS B SYSTEM |
| 3Q04 | CHARGER EMER. GEN STARTING BATTERY |
| 3Q05 | INTERFACE BOX EX-PROFF HORN |
| 3Q06 | CCTV CAMERA IR ILLUMINATORS |
| 3Q07 | SPARE |
| 3Q08 | H2S ALARM SYSTEM |
| 3Q09 | SPARE |
| 3Q10 | NAVIGATION LIGHTS PANEL - BRIDGE CONSOLE STATION |
| 3Q11 | RESCUE BOAT DAVIT HEATERS |
| 3Q12 | RECTIFIER FOR AUTOMATION UPS A SYSTEM |
| 3Q13 | EMERGENCY LIGHTS |
| 3Q14 | EMERGENCY LIGHTS |
| 3Q15 | SPARE |
| 3Q16 | SPARE |
| 3Q17 | EMERGENCY LIGHTS |

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

EMERGENCY GENERATOR DISTRIBUTION 600 VOLT

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|--|
| 2Q01 | SPARE |
| 2Q02 | ME STBD PREHEATING PUMP |
| 2Q03 | SPARE |
| 2Q04 | ME PORT PREHEATING PUMP |
| 2Q05 | TRAILING LO PUMP GEARBOX STBD |
| 2Q06 | SPARE |
| 2Q07 | RESCUE BOAT DAVIT ELECTRIC WINCH PUMP HPU |
| 2Q08 | SPARE |
| 2Q09 | STEERING GEAR STBD PUMP # 2 |
| 2Q10 | STEERING GEAR PORT PUMP # 2 |
| 2Q11 | TRAILING LO PUMP GEARBOX PORT |
| 2Q12 | EMERGENCY FIRE PUMP |
| 2Q13 | SPARE |
| 2Q14 | TRANSFORMER "ET2" 10KVA :600/240 V, 3PH, E-SWBD 240V DIST. |
| 2Q15 | SPARE |
| 2Q16 | AIR STARTING COMPRESSOR #2 |
| 2Q17 | TRANSFORMER "ET1" 3X10KVA :600/120 V, 3PH, E-SWBD 120V DIST. |
| 2Q18 | SPARE |

**CCGS G PEDDLE SC
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MOTORS

**Meggered at
500V**

**CIRCUIT
NUMBER**

EQUIPMENT

Macerator Pump (Sewage Treatment)

B/W Transfer Pump (Sewage Treatment)

Sludge Pump (Sewage Treatment)

HPU

EXHAUST FAN MOTOR MMR

EXHAUST FAN MOTOR AMR

STBD. TRAILING PUMP GEAR BOX

PORT TRAILING PUMP GEAR BOX

5510-1-118-001 AIRSTART COMP (Compressor 1)

5510-1-117-001 AIRSTART COMP (Compressor 2)

2000-1-014-003 CPP PUMP 2.1

2000-1-014-004 CPP PUMP 2.,2

2000-1-014-005 CPP PUMP 1.1

2000-1-014-006 CPP PUMP 1.2

GRAY WATER TRANSFER STATION

JET VAC COLLECTING UNIT

COALESCING PUMP

**CCGS G PEDDLE SC
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CDU1 COMPRESSOR

CDU2 COMPRESSOR

STEERING FLAT

STEERING HYDRAULIC UNIT STBD. AUX.

STEERING HYDRAULIC STBD. MAIN

STEERING HYDRAULIC UNIT PORT AUX.

STEERING HYDRAULIC PORT MAIN

EXHAUST FAN AMR

VFD1-SB09FA INLET FAN AMR

VFD1-SB08FA INLET FAN MMR

VFD1-SB09EA INLET FAN MMR

VFD1-SB08GA INLET FAN AMR

5510-1-117 AIR START COMPRESSOR

5510-1-118 AIR START COMPRESSOR

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FORE PEAK

MEGGER AT 500V

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|--|
| P-414 | WATER HEATER ELEMENTS |
| P-119 | INSTANT WATER HEATER ELEMENTS |
| P-118 | A/C UNIT 2 MOTORS |
| P-101 | HOT WATER CIR. PUMP |
| BSD-40 | BOWTHRUSTER ROOM FAN |
| E2 12 | EM FIRE PUMP |
| | #1 REVERSE OSMOSIS FILTER MOTORS HP # 1 |
| | #2 REVERSE OSMOSIS FILTER MOTORS HP #2 |

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

PANEL P-5 CONVECTION HEATER PANEL 240 VOLT

MEGGER AT 500V

CIRCUIT NUMBER

EQUIPMENT

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|--|
| P5-1 | WASHROOMS FR 29 & STEWARDS LOCKER BELOW M. DECK CONVECTION HEATERS |
| P5-2 | CENTRAL STORE ROOM, MCR & MEDICAL SAR LOCKER BELOW MAIN DECK CONVECTION HEATERS |
| P5-3 | WET GEAR STORE ROOM M. DECK CONVECTION HEATERS |
| P5-4 | H.V.A.C. ROOM M. DECK CONVECTION HEATERS |
| P5-5 | WASHROOMS FR. 26 STBD, GALLEY, STAIRCASE AND WASHROOM FR. 16 STBD M. DECK CONVECTION HEATERS |
| P5-6 | SPARE |
| P5-7 | SPARE |
| P5-8 | SPARE |

**CCGS G PEDDLE SC
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PANEL P-2 BLAST HEATER PANEL 600 VOLT

MEGGER AT 1000V

CIRCUIT NUMBER

EQUIPMENT

| | |
|-------------|---|
| P2-1 | BLAST HEATERS AMR |
| P2-2 | LINEN / LAUNDRY LOCKER BLAST HEATER |
| P2-3 | BLAST HEATER STEERING GEAR ROOM PORT |
| P2-4 | BLAST HEATER STEERING GEAR ROOM STBD |
| P2-5 | SPARE |
| P2-6 | SPARE |

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PANEL P-1 BLAST HEATER PANEL 600 VOLT

MEGGER AT 1000V

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|--|
| P1-1 | BLAST HEATERS MMR |
| P1-2 | BLAST HEATERS MMR & EMERGENCY GENERATOR ROOM |
| P1-3 | BLAST HEATERS BOW THRUSTER ROOM |
| P1-4 | SPARE |
| P1-5 | SPARE |
| P1-6 | SPARE |

**CCGS G PEDDLE SC
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PANEL L-5 (A.C. DISTRIBUTION 120 VOLT)

MEGGER AT 500 V

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|---|
| L5-1 | LIGHTING IN FREEZER,GALLEY DRY FOOD,REFRIGERATOR,WET GEAR,TRASH COMPACTOR, |
| L5-2 | LIGHTING IN ELECTRO. EQUIP. RM. FR.26 STBD, CAPT. CAB,CH. ENG. CABIN, HVAC ROOM, DECK EQUIP LOCKER, FUEL OIL SPILL LOCKER |
| L5-3 | MIRROR AND WALL LAMPS IN ACCOMMODATIONS |
| L5-4 | SOCKET-OPEN M.DK. FR.28 PORT |
| L5-5 | SOCKET-OPEN M.DK. FRS.21 & 12 STBD |
| L5-6 | OPEN MAIN DECK PORT AND STBD LIGHTING |
| L5-7 | SOCKET-OPEN M.DK. FRS.28 STBD |
| L5-8 | SOCKETS-MESS ROOM PORT |
| L5-9 | SOCKET-OPEN M.DK. FR.33 PORT AND STBD |
| L5-10 | LINEN/LAUNDRY LOCKER, MCR, 2ND ENG CABIN AND 2P CABINS BELOW M.DK. |
| L5-11 | FR.29 STBD LOCKER, STEWARD LOCKER, FR.29 PORT AND BOW THRUSTER BELOW MAIN DECK |
| L5-12 | SOCKETS-MESS ROOM FWD BULKHEAD STBD |
| L5-13 | BED LAMPS BELOW M.DK. AND MAIN DECK |
| L5-14 | SOCKET-LAUNDRY AND PASSAGEWAY BELOW MAIN DECK |
| L5-15 | SOCKETS-MCR BELOW MAIN DECK |
| L5-16 | SOCKETS-2ND ENG AND 2P CABINS BELOW MAIN DECK |

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| | |
|-------|--|
| L5-17 | SOCKETS 1P & 2P CABINS BELOW MAIN DECK |
| L5-18 | SOCKETS-EER AND CAPT. CABIN MAIN DECK |
| L5-19 | SOCKETS-INCIDENT COMM. AND CHIEF ENG. CABINS MAIN DECK |
| L5-20 | SOCKETS 2P CABINS PORT AND 2P CABIN STBD BELOW MAIN DECK |
| L5-21 | SOCKET FOR WORKBENCH , EM'CY DG ROOM MAIN DECK |
| L5-22 | SOCKETS 2P CABIN PORT AND 2P CABIN STBD BELOW MAIN DECK |
| L5-23 | SPARE |
| L5-24 | SOCKET-OPEN M.DK. FRS. 10-11 STBD |
| L5-25 | SOCKET-OPEN M.DK FRS. 21 & 12 PORT |
| L5-26 | SPARE |

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PANEL L-4 (MESSROOM PANEL 120 VOLT A.C.)

MEGGER AT 250 V

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|---|
| L4-1 | SOCKET FOR REFRIGERATOR-GALLEY |
| L4-2 | SOCKET FOR FOOD PROCESSOR-GALLEY |
| L4-3 | SOCKET FOR DEEP FRYER-GALLEY |
| L4-4 | SOCKET FOR REFRIGERATOR-MESSROOM |
| L4-5 | SOCKET FOR MICROWAVE OVEN-MESSROOM |
| L4-6 | SOCKET FOR TOASTER-MESSROOM |
| L4-7 | SPARE |
| L4-8 | SPARE |
| L4-9 | SOCKET FOR REFRIGERATORS (CAPT. AND CH. ENG.) |
| L4-10 | SOCKET FOR COFFEE MAKER-MESSROOM |
| L4-11 | SOCKET FOR SOUP WARMER-MESSROOM |
| L4-12 | SOCKET FOR MIXER-GALLEY |

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PANEL L-3 (120 VOLT)

MEGGER AT 50 V

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|---|
| L3-01 | SOCKET TOP DECK FWD-PORT |
| L3-02 | SOCKET TOP DECK FWD-STBD |
| L3-03 | SOCKET TOP DECK AFT-PORT |
| L3-04 | SOCKET TOP DECK AFT-STBD |
| L3-05 | NORMAL LIGHTING-COMMAND CENTRE |
| L3-06 | SOCKETS FROM BRIDGE(CHART TABLE,GMDSS AND CELL PHONE CHARGER) |
| L3-07 | SOCKETS FROM COMMAND CENTRE (INCIDENT COMMANDER AND STBD TABLE) |
| L3-08 | SOCKETS FROM BRIDGE AND COMMAND CENTRE |
| L3-09 | SPARE |
| L3-10 | SEARCH LIGHT-STBD |
| L3-11 | FLOODLIGHT BRIDGE DECK PORT (AFT AREA) |
| L3-12 | FLOODLIGHT BRIDGE DECK STBD (AFT AREA) |
| L3-13 | SOCKET RADAR ANTENNA TOP DECK PORT |
| L3-14 | NORMAL LIGHTING-BRIDGE |
| L3-15 | FIRE DETECTION CONTROL UNIT |
| L3-16 | SOCKET FOR FR. 21 PORT AND STBD BRIDGE |
| L3-17 | POWER SUPPLY-SATELLITE ANTENNA CONTROL UNIT |
| L3-18 | SPARE |

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L3-19 SOCKET FOR FLOODLIGHT FR. 31 BRIDGE DECK

L3-20 SOCKET FOR FLOODLIGHT FR. 09 MAIN DECK PORT AND STBD

L3-21 SPARE

L3-22 SPARE

**CCGS G PEDDLE SC
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L2 PP TOGGLE SWITCH

| Circuit Number | Equipment |
|-----------------------|---|
| L2-12-01 | WET GEAR FAN |
| L2-12-02 | SPARE |
| L2-12-11-09-03 | WASHROOM MAIN DECK FORWARD FAN |
| L2-12-04 | WASHROOM BELOW MAIN DECK FR. 26 PORT AND STBD. FANS |
| L2-12-05 | WASHROOM MAIN DECK FR. 16 STBD FAN |
| L2-12-06 | LAUNDRY FAN |
| L2-12-07 | HVAC ROOM FAN |
| L2-12-08 | FUEL OIL SPILL LOCKER FAN |
| L2-12-10 | STAIR CASE FAN MAIN DECK FR. 18 |
| L2-12-12 | MEDICAL EQ AND SAR LOCKER FAN |
| L2-12-13 | GALLEY HOOD FAN |

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PANEL L-2 (HEATING AND GALLEY 240 VOLT A.C.)

MEGGER AT 500 V

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|---------------------------------------|
| L2-1 | Galley Mini Split |
| L2-2 | SPARE |
| L2-3 | SPARE |
| L2-4 | SPARE |
| L2-5 | STAIR CASE DUCT HEATER |
| L2-6 | MESS ROOM AND GALLEY DUCT HEATER |
| L2-7 | BRIDGE DUCT HEATER |
| L2-8 | COMMAND CENTRE DUCT HEATER |
| L2-9 | SUPPLY BOX / HEATERS (4 COMPARTMENTS) |
| L2-10 | SUPPLY BOX / HEATERS (7 COMPARTMENTS) |
| L2-11 | SPARE |
| L2-12 | FANS DISTRIBUTION |

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PANEL L-1 (120 VOLT A.C.)

MEGGER AT 250V

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|---|
| Q-20 | BATTERY CHARGER (BATTERY BACK UP SYSTEM) |
| Q-21 | BATTERY CHARGER (AUTOMATION UPS A) |
| Q-22 | SOCKET AFT WORKING AREA (MAIN DECK FRAME 0) |
| Q-23 | LIGHT STAIR BELOW MAIN DECK AND MAIN DECK |
| Q-24 | SOCKETS STEERING GEAR , AMR, MMR, FORE |
| Q-25 | LIGHTS STEERING GEAR, 1/2 AMR, 1/2 MMR |
| Q-26 | LIGHTS STEERING GEAR, 1/2 AMR, 1/2 MMR |
| Q-27 | NAVIGATION LIGHTS PANEL (BRIDGE CONSOLE) |
| Q-28 | BATTERY CHARGER (AUTOMATION UPS-B) |
| Q-29 | L-3 DISTRIBUTION PANEL 120 VOLT |
| Q-30 | L-4 DISTRIBUTION PANEL 120 VOLT (GALLEY AND MESS EQUIPMENT) |
| Q-31 | BRIDGE AFT HEATED WINDOWS |
| Q-32 | SPARE |
| Q-33 | L-5 DISTRIBUTION PANEL 120 VOLT |
| Q-34 | SPARE |
| Q-35 | ACTUATOR FOR CYCLONE FILTER (PURGING VALVE CONTROL PANEL) |
| Q-36 | SPARE |
| Q-37 | BRIDGE AFT HEATED WINDOWS |

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DRYDOCKING & REFIT 2015**

PANEL L-1 (240 VOLT BUSS A)

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|--|
| Q02 | L2 DISTRIBUTION PANEL |
| Q03 | SOCKET AFT WORKING AREA-PORT FR. 8-9 |
| Q04 | SOCKET AFT WORKING AREA-STBD FR. 8-9 |
| Q05 | SOCKET FORE WORKING AREA STBD FR. 10 MAIN DECK |
| Q06 | SOCKET AFT MMR |
| Q07 | SOCKET FORE MMR |
| Q08 | BOW THRUSTER ROOM FAN |
| Q09 | UV STERILIZER |
| Q10 | IICS MAIN CABINET |
| Q11 | SEWAGE TREATMENT PLANT |
| Q12 | SOCKET GALLEY |
| Q13 | ENGINEERS SHOP FAN |
| Q14 | EXHAUST FAN AMR |
| Q15 | EXHAUST FAN MMR |
| Q16 | GRAY WATER TRANSFER PUMP |
| Q17 | SCIENTIC FREEZER |
| Q18 | DISHWASHER |

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DISTRIBUTION BOARD BUSS "B"

| | |
|------------|--|
| Q40 | DISTRIBUTION BOARD BUSS"C" |
| Q51 | PORT CONVECTION HEATER DISTRIBUTION PANEL |

DISTRIBUTION BOARD BUSS "C"

| | |
|------------|-------------------------------------|
| Q41 | COOKING RANGE |
| Q42 | WASHING / DRYING MACHINE # 1 |
| Q43 | WASHING / DRYING MACHINE # 2 |
| Q44 | SPARE |
| Q45 | DISHWASHER |
| Q46 | FOOD WASTE DISPOSER |
| Q47 | SCIENTIST FREEZER |
| Q48 | SPARE |
| Q49 | FW HYDROPHORE PUMP #1 |
| Q50 | FW HYDROPHORE PUMP #2 |
| Q52 | SPARE |
| Q53 | SPARE |

TRANSFORMERS

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

MEGGER AT 500 V

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|---------------------------------|
| | 600/240V PRIMARY |
| | PORT STBD. |
| | 600/240V SECONDARY |
| | PORT STBD. |
| | 600/120V PRIMARY |
| | PORT STBD. |
| | 600/120V SECONDARY |
| | PORT STBD. |
| | SHORE POWER TRANSFORMERS |
| | PRIMARY SECONDARY |

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

GENERATORS

MEGGER AT 500 V

EQUIPMENT

PORT GENERATOR # 2

CABLE TO SWBD

STBD GENERATOR # 1

CABLE TO SWBD

EM GENERATOR

600V BUSS

#1 Generator S/N: WA-576975-0111

#2 Generator S/N: WA-576977-0111

Emergency Generator S/N: MX-154850-0111

LOCKOUT/TAGOUT PROCEDURE FOR GENERATORS:

1. Lockout Generator Circuit Breaker at Switchboard.
2. Inhibit Generator start at Local Control Panel.
3. Isolate Air Start and bleed off line to Air Starter for Main Generators/ Disconnect Battery for Emergency Generator.
4. Isolate Meg Alert System for respective Generators -
 - a. Emergency Generator open fuse FU03SB11CA in Section 1 Emergency Swbd.
 - b. Port (2) Main Generator open fuse FU09SB05AB Section 3 Main Swbd.
 - c. Stbd (1) Main Generator open fuse FU04SB05AB Section 3 Main Swbd.

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

600 VOLT DISTRIBUTION PANEL STBD.

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|--|
| 1Q01 | HOT WATER CIRCULATION PUMP #1 (B.T. ROOM) |
| 1Q02 | SPARE |
| 1Q04 | CPP STBD PRESS. MAINTAINING PUMP |
| 1Q11 | CPP STBD MAIN PUMP |
| 1Q13 | REVERSE OSMOSIS SYSTEM (B.T. ROOM) |
| 1Q14 | P-1 BLAST HEATER DISTRIBUTION PANEL |
| 1Q15 | SPARE |
| 1Q17 | SPARE |
| 1Q18 | CONDENSION UNIT HVAC CONTROL PANEL |
| 1Q19 | INLINE HEATER (ON DEMAND HOT WATER HEATER) |
| 1Q20 | SPARE |
| 1Q21 | HUMIDIFIER |
| 1Q24 | SPARE |
| 1Q25 | SPARE |
| 1Q26 | SPARE |
| 1Q06 | SPARE |
| 1Q10 | STEERING GEAR STBD PUMP # 1 |

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600V 3 PHASE PORT DISTRIBUTION PANEL

MEGGER AT 500 V

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|---|
| 4Q02 | CPP PORT MAIN PUMP |
| 4Q03 | SPARE |
| 4Q06 | VACUUM SYSTEM UNIT (240 VOLT) |
| 4Q07 | COALESCER FILTER CONTROL PANEL |
| 4Q10 | SPARE |
| 4Q12 | REVERSE OSMOSIS SYSTEM (B.T. ROOM) |
| 4Q13 | SPARE |
| 4Q14 | AIR COMPRESSOR # 1 AMR |
| 4Q15 | HOT WATER HEATER (B.T. ROOM) |
| 4Q17 | P2 BLAST HEATER DISTRIBUTION PANEL |
| 4Q18 | SPARE |
| 4Q19 | TRANSFORMER "T3" 30 KVA, 600/240V, 3PH, L1 DIST. SWBD BUSS-B |
| 4Q20 | DECK MACH. SYST. (INT HYDR, SYST.) |
| 4Q21 | AHU CONTROL PANEL DUCT. PANEL HEATER HVAC |
| 4Q22 | CPP PORT PRESSURE MAINTAINING PUMP |
| 4Q26 | SPARE |
| 4Q08 | STEERING PUMP PORT # 1 |
| 4Q09 | SPARE |

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

MCC-STBD

MEGGER AT 500V

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|---------------------------------------|
| 1-A | SW SERVICE COOLING PUMP #1 |
| 1-B | F/O TRANSFER PUMP |
| 1-C | DIRTY OIL TRANSFER PUMP |
| 1-D | FRESH WATER TANK #11 IMMERSION HEATER |
| 1-E | FIRE/BILGE PUMP AMR SELF PRIMING |
| 1-F | INLET FAN MMR |
| 1-G | INLET FAN AMR |
| 1-H | SW PUMP CONDENSING UNIT |
| 1-J | SPARE |

**CCGS G PEDDLE SC
DRYDOCKING & REFIT 2015**

MCC-PORT

MEGGER AT 500V

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|---------------------------------------|
| 2-A | FO CONTINOUS TRANSFER PUMP |
| 2-B | SW SERVICE COOLING PUMP #2 |
| 2-C | L.O. TRANSFER PUMP |
| 2-D | BILGE/FIRE PUMP MMR SELF PRIMING |
| 2-E | INLET FAN MMR |
| 2-F | INLET FAN AMR |
| 2-G | FRESH WATER TANK #12 IMMERSION HEATER |
| 2-H | SPARE |
| 2-J | SPARE |

**CCGS G PEDDLE SC
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SECTION 3 SWBD

MEGGER AT 500 V

| CIRCUIT NUMBER | EQUIPMENT |
|-----------------------|--|
| 3Q02 | TRANSFORMER T1 3 X10KVA 600/240 3PH L1 DISTRIBUTION SWBD BUSS A |
| 3Q03 | CB-E TIE TO EM SWBD |
| 3Q04 | TRANSFORMER T2 3X15KVA 600/120V 3 PH L1 DISTRIBUTION SWBD |
| | CB-TIE TIES PORT AND STRB SWBD |

SECTION 2 SWBD

| | |
|---------|--|
| 2Q04 | TRANSFORMER T1 3X10 KVA 600/240V 3 PH L1 DISTRIBUTION SWBD BUSS A |
| 2Q05 | CB-E TIE TO EM SWBD |
| 2Q06 | TRANSFORMER T2 3X15KVA 600/120V 3 PH L1 DISTRIBUTION SWBD |
| CB-SP-A | SHORE POWER A 600V AC 60 HZ 3 PH 200AMP |
| CB-SP-B | SHORE POWER B 600V AC 60 HZ 3 PH 200 AMP |

NOTE: When taking Swbd Reading Ground Detection cables must be unplugged in Section 1 and 4 of Swbd and Ground Lead for Earth Detection Relay(IM01-SB05AB) must be disconnected in Section 3