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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.)
Halifax
Nova Scotia
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.)
Halifax
Nova Scot
B3J 1T3

Title - Sujet CCGS G. Peddle Drydocking	
Solicitation No. - N° de l'invitation F5561-220655/A	Date 2022-11-14
Client Reference No. - N° de référence du client F5561-22-0655	GETS Ref. No. - N° de réf. de SEAG PW-\$HAL-201-11601
File No. - N° de dossier HAL-2-89075 (201)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM Atlantic Standard Time AST on - le 2022-12-13 Heure Normale de l'Atlantique HNA	
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: Crocker, Quentin	Buyer Id - Id de l'acheteur hal201
Telephone No. - N° de téléphone (902) 478-8034 ()	FAX No. - N° de FAX (902) 496-5016
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: CANADIAN COAST GUARD MARINE ENGINEERING 50 DISCOVERY DR - LEVEL 4 DARTMOUTH NOVA SCOTIA B2Y 4A2 CANADA	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée See Herein – Voir ci-inclus	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

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PART 1 - GENERAL INFORMATION

1.1 Introduction

The bid solicitation is divided into seven parts plus attachments and annexes, as follows:

- Part 1 General Information: provides a general description of the requirement;
- Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation;
- Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;
- Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, 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, the Insurance Requirements, and any other annexes.

1.2 Summary

The Contractor must:

- 1.2.1 carry out the docking, maintenance and alterations of the Department of Fisheries and Oceans vessel CCGS G. Peddle S.C. in accordance with the Requirement at Annex "A".
- 1.2.2 carry out any approved unscheduled work not covered in the above paragraph (a).
- 1.2.3 note that the Federal Contractors Program (FCP) for employment equity applies to this procurement; refer to Part 5 – Certifications and Additional Information, Part 7 - Resulting Contract Clauses and the annex titled Federal Contractors Program for Employment Equity - Certification
- 1.2.4 note that this bid solicitation allows bidders to use the Canada Post Corporation's Connect service to transmit their bid electronically. Bidders must refer to Part 2 entitled Bidder Instructions, and Part 3 entitled Bid Preparation Instructions, of the bid solicitation, for further information.

1.3 Debriefings

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

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

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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) (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](#) (2022-03-29) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.2 Submission of Bids

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

1. Connect

Note: For bidders choosing to submit using Connect for bids closing at the Bid Receiving Unit in Halifax, NS, the email address is:

TPSGC.RARceptionSoumissionsNE-ARBidReceivingNS.PWGSC@tpsgc-pwgsc.gc.ca

Note: Bids will not be accepted if emailed directly to this email address. This email address is to be used to open an Connect conversation, as detailed in Standard Instructions [2003](#), or to send bids through an Connect message if the bidder is using its own licensing agreement for Connect.

Please ensure to initiate the Connect conversation at least 6 days prior to bid closing.

2. Facsimile

902-496-5016

Bidders should note that hardcopy delivery of bids is not accepted.

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 question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated and the enquiry can be answered to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

2.4 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in [Nova Scotia](#).

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory

specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

2.5 Bidders' Conference

A bidders' conference will be held via **teleconference** on **November 22, 2022**. **The conference will begin at 1:00 PM AST**. The scope of the requirement outlined in the bid solicitation will be reviewed during the conference and questions will be answered. It is recommended that bidders who intend to submit a bid attend or send a representative.

Bidders are requested to communicate with the Contracting Authority before the conference to confirm attendance and obtain videoconference login details. Bidders should provide, in writing, to the Contracting Authority, the name(s) of the person(s) who will be attending and a list of issues they wish to table no later than 3 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

It is recommended that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for the site visit to be held at **Bedford Institute of Oceanography in Dartmouth, Nova Scotia on November 22, 2022**. **The site visit will begin at 09:00 am AST**.

Bidders must communicate with the Contracting Authority no later than 5 working days before the scheduled visit to confirm attendance and provide the name(s) of the person(s) who will attend.

Bidders who do not confirm attendance, provide the name(s) of the person(s) who will attend **will not be allowed access to the site**. Bidders may be requested to sign an attendance sheet. No alternative appointment will be given to bidders who do not attend or do not send a representative. Bidders who do not participate in the visit 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 - Bid

Work must commence and be completed as follows:

Commence: 10 January 2023
Complete: 7 March 2023.

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.

2.8 Project Schedule

As part of its technical bid, the Bidder must propose its preliminary project schedule, in Gantt 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.

The Bidder's schedule must also provide a target date for each of the following significant events:

- a. Vessel Docking ;
- b. Vessel Undocking ;

c. Sea Trials.

2.9 Vessel Transfer Costs

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

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

Proposed shipyard/ship repair facility: _____

Applicable vessel transfer cost: _____ .

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

The Contracting Authority will confirm to the Bidder, in writing, at least two (2) calendar days before the bid closing date, the location of the shipyard/ship repair and the applicable vessel transfer cost.

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

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

Vessel: CCGS G. Peddle S.C.
Home port: Dartmouth, Nova Scotia

Transfer costs in the case of vessels transferred using a government delivery crew include the fuel cost at the vessel's most economical speed of transit and for unmanned refits only, crew transportation costs for the delivery crew based on the location of the vessel's home port and the shipyard/ship repair facility.

Crew transportation costs do not include any members of the delivery crew who remain at the shipyard/ship repair facility in order to discharge project responsibilities related to the vessel being transferred.

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

- i) included as part of the Bidder's financial bid in the case where the Bidder is responsible for the transfer; or
- ii) identified as the applicable vessel transfer cost, as given in the list below, in the case when Canada is responsible for the transfer.

Shipyard / ship repair facility	Applicable vessel transfer cost
St John's Dockyard, N.L.	\$54,450
Irving Shipbuilding, Halifax, NS	\$103
Canadian Maritime Engineering, North Sydney, NS	\$24,544

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Canadian Maritime Engineering, Sambro, NS	\$1,753
Canadian Maritime Engineering, Clarenville, N.L.	\$63,319
Shelburne Ship Repair, Shelburne, NS	\$ 11,447

2.10 Docking Facility Certification

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

Before contract award and within two (2) calendar days of written notification by the Contracting Authority, the successful Bidder must provide current and valid certification of the capacity and condition of the docking facility to be used for the Work. The certification must be provided by a recognized consultant or classification society and must have been issued within the past two years.

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

2.11 Workers Compensation Certification- 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) 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.

2.12 Welding Certification

1. Welding must be performed by a welder certified by the Canadian Welding Bureau (CWB) for the following Canadian Standards Association (CSA) standards:
 - a. CSA W47.1 (current version), Certification of Companies for Fusion Welding of Steel (Division Level 1 or 2);
 - b. CSA W47.2 (current version), Certification of Companies for Fusion Welding of Aluminum (Division Level 1 or 2).
2. Before contract award and within two (2) calendar days of the written request by the Contracting Authority, the successful Bidder must submit evidence demonstrating its or its subcontractor's certification by CWB in accordance with the CSA welding standards.

2.13 SAAC Manual Clauses

A7035T (2007-05-25) List of Proposed Sub-contractors
A9125T (2007-05-25) Valid Labour Agreement
B3000T (2006-06-16) Equivalent Products

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Section I: Financial Bid

3.1.1 Bidders must submit their financial bid in accordance with the Financial Bid Presentation Sheet in Annex "F". The total amount of Applicable Taxes must be shown separately, if applicable.

3.1.2 SACC Manual Clauses

C0414T (2008-05-12) Vessel Refit, Repair or Docking – Cost
C0417T (2008-05-12) Unscheduled Work and Evaluation Price

Section II: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the financial evaluation criteria.
- (b) 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.

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

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

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

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

5.1 Certifications Required with the Bid

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

5.1.1 Integrity Provisions - Declaration of Convicted Offences

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

5.2 Certifications Precedent to Contract Award and Additional Information

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

5.2.1 Integrity Provisions – Required Documentation

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

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's](https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#) website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

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 [Federal Contractors Program for Employment Equity - Certification](#), before contract award. If the Bidder is a Joint Venture, the Bidder must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

5.2.3 Additional Certifications Precedent to Contract Award

- a. Project Schedule
- b. Docking Facility Certification
- c. Workers Compensation Certification- Letter of Good Standing
- d. Welding Certification
- e. List of Proposed Sub-contractors
- f. Valid Labour Agreement
- g. Insurance Certificate
- h. ISO Registration Documentation
- i. Integrity Provisions – Required Documentation
- j. Federal Contractors Program for Employment Equity – Certification

PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

6.1 Security Requirements

There is no security requirement associated with the 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 in 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 ISO 9001:2015 - Quality Management Systems

Before contract award and within two (2) calendar days of written notification by the Contracting Authority the Bidder must provide its current ISO Registration Documentation indicating its registration to ISO 9001:2015. Documentation and procedures of bidders not registered to the ISO standards may be subject to a Quality System Evaluation (QSE) by the Inspection Authority or designate before award of a contract.

PART 7 - RESULTING CONTRACT CLAUSES

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

7.1 Requirement

The Contractor must:

- a. carry out the docking, maintenance and alterations of the Department of Fisheries and Oceans vessel CCGS G. Peddle S.C. in accordance with the Requirement at Annex "A".
- b. carry out any approved unscheduled work not covered in the above paragraph (a).

7.2 Standard Clauses and Conditions

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

7.2.1 General Conditions

[2030](#) (2021-12-02), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

7.2.2 Supplemental General Conditions

7.2.2.1 1029 (2018-12-06) Ship Repairs, apply to and form part of the Contract.

7.2.2.2 4013 (2021-11-29) Compliance with on-site measures, standing orders, policies and rules.

The Contractor must comply and ensure that its employees and subcontractors comply with all security measures, standing orders, policies or other rules in force at the site where the Work is performed.

7.3 Security Requirements

There is no security requirement applicable to this Contract.

7.4 Term of Contract

7.4.1 Work Period – Marine – Contract

Work must commence and be completed as follows:

Commence: 10 January 2023
Complete: 7 March 2023

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:

Name: Quentin Crocker
Title: Supply Team Leader, Marine
Public Works and Government Services Canada
Acquisitions Branch, Marine Procurement
Address: 1713 Bedford Row, Halifax, NS, B3J 1T3

Telephone: (902) 478-8034
E-mail address: quentin.crocker@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 Technical Authority

The Technical Authority for the Contract is:

Jeffrey Mercier
Senior Vessel Maintenance Manager
Fisheries and Oceans / Canadian Coast Guard

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Telephone: (902) 471-0802
E-mail Address: Jeffrey.Mercier@dfo.mpo.gc.ca

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

7.6 Payment

7.6.1 Basis of Payment

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". 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 Limitation of Price

SACC Manual clause C6000C (2017-08-17) Limitation of Price

7.6.3 Progress Payments

1. Canada will make progress payments in accordance with the payment provisions of the Contract, no more than once a month, for cost incurred in the performance of the Work, up to 100 percent of the amount claimed and approved by Canada if:
 - a. an accurate and complete claim for payment using form [PWGSC-TPSGC 1111](#), Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
 - b. the amount claimed is in accordance with the basis of payment;
 - c. the total amount for all progress payments paid by Canada does not exceed 80 percent of the total amount to be paid under the Contract;
 - d. all certificates appearing on form [PWGSC-TPSGC 1111](#) have been signed by the respective authorized representatives.
2. The balance of the amount payable will be paid in accordance with the payment provisions of the Contract upon completion and delivery of all work required under the Contract if the Work has been accepted by Canada and a final claim for the payment is submitted.
3. Progress payments are interim payments only. Canada may conduct a government audit and interim time and cost verifications and reserves the rights to make adjustments to the Contract from time to time during the performance of the Work. Any overpayment resulting from progress payments or otherwise must be refunded promptly to Canada.

7.7 Invoicing Instructions - Progress Payment Claim - Supporting Documentation required

1. The Contractor must submit a claim for payment using form [PWGSC-TPSGC 1111](#), Claim for Progress Payment.

Each claim must show:

- a. all information required on form [PWGSC-TPSGC 1111](#);
- b. all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
- c. the description and value of the milestone claimed as detailed in the Contract.

Each claim must be supported by:

- a. a copy of the fully up-to-date and signed individual inspection and test plan for the specification item being claimed;
 - b. a copy of a worksheet indicating a percentage of progress complete of each individual specification item being claimed signed by the Project Manager, Technical Authority and Contracting Authority.
2. Applicable Taxes must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no Applicable Taxes payable as it was claimed and payable under the previous claims for progress payments.
 3. The Contractor must prepare and certify one original and two (2) copies of the claim on form [PWGSC-TPSGC 1111](#), and forward it to the Project Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.
 4. The Project Authority will then forward the original and two (2) copies of the claim to the Contracting Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.
 5. The Contractor must not submit claims until all work identified in the claim is completed.

7.8 Project Schedule

The Contractor must provide a detailed project schedule in Gantt chart format to the Contracting Authority and the Technical Authority one (1) week after award of Contract. This schedule must highlight the specific dates for the events listed below and all items listed in the Pricing Data Sheet.

The Contractor's schedule must include target dates for each of the following significant events:

- a. Vessel Docking ;
- b. Vessel Undocking ;
- c. Sea Trials.

7.9 Meetings

Progress meetings, chaired by the Contracting Authority, will take place at the Contractor's facility as and when required, generally once a week. 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.

7.10 Welding Certification

The Contractor must ensure that welding is performed by a welder certified by the Canadian Welding Bureau (CWB) for the following Canadian Standards Association (CSA) standard(s):

- a. CSA W47.1 (current version), Certification of Companies for Fusion Welding of Steel (Division Level 1 or 2);
- b. CSA W47.2 (current version), Certification of Companies for Fusion Welding of Aluminum (Division Level 1 or 2).

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

Before the commencement of any fabrication work, and upon request from the Inspection Authority, the Contractor must provide approved welding procedures and/or a list of welding personnel they intend 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 certification to CSA welding standards.

7.11 Inspection and Acceptance

The Technical Authority is the Inspection Authority. All reports, deliverable items, documents, goods and all services rendered under the Contract are subject to inspection by the Inspection Authority or representative. Should any report, document, good or service not be in accordance with the requirements of the Statement of Work and to the satisfaction of the Inspection Authority, as submitted, the Inspection Authority will have the right to reject it or require its correction at the sole expense of the Contractor before recommending payment.

7.12 Outstanding Work and Acceptance

The Inspection Authority, in conjunction with the Contractor, will prepare a list of outstanding work items at the end of the work period. This list will form the annexes to the formal acceptance document for the vessel. A contract completion meeting will be convened by the Inspection Authority on the work completion date to review and sign off the form PWGSC-TPSGC 1205, 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.

The Contractor must complete the above form in three (3) copies, which will be distributed by the Inspection Authority as follows:

- a. original to the Contracting Authority;
- b. one copy to the Technical Authority;
- c. one copy to the Contractor.

7.13 Vessel Warranty – Refit and Repair

The warranty clause of the general conditions forming part of the Contract is deleted and replaced by the following:

"08 Warranty"

The Contractor, if requested by Canada, must replace or repair at its own expense any finished work, excluding Government Issue incorporated in the Work, which becomes defective or which fails to conform to contract requirements as a result of faulty or inefficient manufacture, material or workmanship.

Despite acceptance of the finished work, and without restricting any other term of the Contract or any condition, warranty or provision imposed by law, the Contractor warrants that the following will be free from all defects and will conform with the requirements of the Contract:

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

Original cost to Canada of the underwater painting work, divided by 365 days and multiplied by the number of days remaining in the warranty period. The resultant sum would represent the "Dollar Credit" due to Canada from the Contractor.

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

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

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

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.

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

Refer to Annex "D" for Warranty Defect Claim Procedures and forms.

7.14 Warranty – Contractor responsible for all costs

Section 22 entitled Warranty of general conditions 2030 is amended by deleting subsections 3 and 4 in its entirety and replacing it with the following:

The Work or any part of the Work found to be defective or non-conforming will be returned to the Contractor's plant for replacement, repair or making good. However, when in the opinion of Canada it is not expedient to remove the Work from its location, the Contractor must carry out any necessary repair or making good of the Work at that location. In such cases, the Contractor will be responsible for all Costs (including travel and living expenses) incurred in so doing, Canada will not reimburse these Costs.

The Contractor must pay the transportation cost associated with returning the Work or any part of the Work to the Contractor's plant pursuant to subsection 3. The Contractor must also pay the transportation cost associated with forwarding the replacement or returning the Work or part of the Work when rectified to the delivery point specified in the Contract or to another location directed by Canada.

All other provisions of the warranty section remain in effect.

7.15 Certifications and Additional Information

7.15.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

7.15.2 Federal Contractors Program for Employment Equity - Default by the Contractor

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

7.15.3 SACC Manual Clauses

A0285C (2007-05-25)	Workers Compensation
A9047C (2008-05-12)	Title to Property – Vessel
A9006C (2012-07-16)	Defence Contract
B5007C (2010-01-11)	Procedures for Design Change or Additional Work
B6100C (2008-05-12)	Stability
B9014C (2013-04-25)	Outstanding Work and Acceptance – Civilian
B9035C (2008-05-12)	Progress Meetings
A0024C (2014-11-27)	Vessel Unmanned Refits
A0290C (2008-05-12)	Hazardous Waste – Vessels
A9055C (2010-08-16)	Scrap and Waste Material
A9066C (2008-05-12)	Vessel – Access by Canada
A9068C (2010-01-11)	Government Site Regulations

7.16 Applicable Laws

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

7.17 Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the supplemental general conditions 1029 (2018-12-06);
- (c) the general conditions 2030 (2022-05-12);
- (d) Annex A, Statement of Work;
- (e) Annex B, Basis of Payment;
- (f) Annex F, Financial Bid Presentation Sheet;
- (g) Appendix 1 to Annex F, Pricing Data Sheet
- (h) Annex C, Insurance Requirements;
- (i) the Contractor's bid dated _____.

7.18 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.

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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.

7.19 ISO 9001:2015 - Quality Management Systems

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

ISO 9001:2015 - 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 or designate 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 or designate 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 or designate 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 or designate, the equipment necessary for all validation purposes. Contractor personnel must be made available for operation of such equipment as required.

When the Inspection Authority or designate 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 or designate, together with relevant technical data as the Inspection Authority or designate may request. The Contractor must notify the Inspection Authority or designate of non-conforming product received from a subcontractor when the product has been subject to GQA.

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ANNEX "A"

STATEMENT OF WORK

The entire Statement of Work is a separate electronic document entitled:

**CCGS G. Peddle S.C. - Dry Docking Refit
SPECIFICATION NO: 22-G028-010-1**

Potential bidders requiring a copy of the complete technical data package are to submit an email request directly to the Contracting Authority: Quentin.Crocker@pwgsc-tpsgc.gc.ca .

ANNEX “B”

BASIS OF PAYMENT

Remark to Bidder: Annex B will form the Basis of Payment for the resulting contract and should not be filled in at the bid submission stage. Refer to Annex F “Financial Bid Presentation Sheet”.

1. Contract Price

a)	Known Work For work as stated in Part 1, Specified in Annex “A” for a FIRM PRICE of:	\$ _____
b)	HST (_____ %) of Line a) only	\$ _____
c)	Total Firm Price HST Included: For a FIRM PRICE of :	\$ _____

2. Unscheduled Work

2.1 Price Breakdown:

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

2.2 Pro-rated Prices:

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

2.3 Payment for Unscheduled Work:

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

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

C0902C (2008-12-12)

3 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 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.

4 Daily Services Fee

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

The firm daily services fee is:

- | | | |
|-----|---------------------------------------|----------|
| (a) | For a working day on the drydock | \$ _____ |
| (b) | For a non-working day on the drydock: | \$ _____ |
| (c) | For a working day at the berth: | \$ _____ |
| (d) | For a non-working day at the berth: | \$ _____ |

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

5 FSR and Subcontractor Travel

5.1 Travel Management

The Contractor is responsible for the management of subcontractor travel. Any variation from the National Joint Council Travel Directive that incurs unauthorized costs requires written authorization from the Contracting Authority prior to travel. Travel costs claimed without written authorization will be rejected or reimbursed at the estimated authorized price (ie. business class flights will be reimbursed at the price of an economy flight), at the discretion of the Contracting Authority.

Only allowances that specifically include the provision to reimburse subcontractor travel and living expenses will be reimbursed by Canada.

5.2 Travel Directive

The Contractor will be reimbursed authorized travel and living expenses reasonably and properly incurred by the authorized subcontractor in the performance of the Work, at cost, without any allowance for profit and/or administrative overhead. Exceptions will only be considered if authorized in advance in writing by the CA prior to travel. The allowance must form part of the overall bid and must be adjusted by the PSPC 1379 process upon proof of final invoice. The reimbursement is eligible for the Contractor's allowance mark-up in accordance with the pricing data sheet, which is not to exceed 10%. Travel claim 1379 adjustments and associated invoices are cost reimbursements and are not subject to additional taxes.

All claims for travel reimbursement must be in accordance with the meal, and private vehicle allowances specified in Appendices B, C and D of the [National Joint Council Travel Directive](#), and with the other provisions of the directive referring to "travellers", rather than those referring to "employees". Canada will not pay any incidental expense allowance for authorized travel. In order to be eligible to claim breakfast the traveller must have departed their residence prior to 6:00 am local time. In order to be eligible to claim supper the traveler must have arrived at their residence after 6:00 pm local time. Departure and arrival times must be supported by timesheets.

5.3 Claims Process

The Contractor must provide receipts and invoices to support 1379 adjustment travel claims for all claim items except meals. Travel claims must be invoiced as a non-taxable line item. Travel claims must be supported by timesheets, receipts/invoices and a copy of the written travel authorization. Original receipts must be provided unless waived in writing by the Contracting Authority. Original receipts submitted to the Contracting Authority will not be returned.

The Contractor must provide a full breakdown of the travel claim in a Microsoft Excel workbook, providing details of each individual expense (see figure 5.4). A separate workbook must be submitted to the Contracting Authority for each traveller per invoice period, and must include, at a minimum, the following information:

Header

Name of traveller;
Company name;
Contract number;
Specification item;
Value of allowance including markup;
Value of any previous claims (if applicable);
Period of claim;
Date and time of departure and arrival from/to residence.

Line Item Details

Date;
Category of claim (ie. Taxi, Air Fare, Hotel, etc);
Actual cost indicated on receipt, including applicable taxes;
Cost in CAD, including applicable taxes;
Foreign exchange rate (if applicable);
Foreign exchange conversion date (if applicable);
Price variation (if applicable);
Reason for price variation (ie. exchange rate variation, cost-sharing between multiple projects, etc.)

Line item details must be sorted by date then by category. Each cell must be formatted to reflect the appropriate value based on its contents. The workbook must be open for editing and no parts of the workbook may be locked. The workbook and all information contained within will become the property of Canada.

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Figure 5.4

Travel Claim							
Name of Traveller: _____				Allowance Total: _____			
Company Name: _____				Sum of Previous Claims against Allowance: _____			
Contract Number: _____				Period of Claim: _____			
Specification Number: _____				Date/Time Departure from Residence: _____			
Spec Item Number: _____				Date/Time Arrival to Residence: _____			
Date (DD-MM- YYYY)	Category (hotel, taxi, etc)	Actual Cost (Actual currency paid)	Claim Amount (CAD)	FCX Rate Used (N.NNNN)	FCX Date (DD-MM-YYYY)	Price Variation (CAD)	Reason for Variation (text)

ANNEX "C"

INSURANCE REQUIREMENTS

C1 Ship Repairers' Liability Insurance

1. The Contractor must obtain Ship Repairers' 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 Repairers' Liability insurance must include the following:
 - a. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.
 - b. Waiver of Subrogation Rights: Contractor's Insurer to waive all rights of subrogation against Canada as represented by the Department of Fisheries and Oceans/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 Contractor will provide the Contracting Authority thirty (30) days prior written notice of policy cancellation or any changes to the insurance policy.
 - 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.
 - f. Litigation Rights: Pursuant to subsection 5(d) of the [Department of Justice Act](#) , S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:

*Director Business Law Directorate,
Quebec Regional Office (Ottawa),
Department of Justice,
284 Wellington Street, Room SAT-6042,
Ottawa, Ontario, K1A 0H8*

For other provinces and territories, send to:

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

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

G5001C (2018-06-21)

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 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. Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.
 - d. 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.
 - 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.
 - f. 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.

-
- g. Employees and, if applicable, Volunteers must be included as Additional Insured.
 - h. Employers' Liability (or confirmation that all employees are covered by Worker's compensation (WSIB) or similar program)
 - i. Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.
 - j. Notice of Cancellation: The Contractor will provide the Contracting Authority thirty (30) days prior written notice of policy cancellation or any changes to the insurance policy.
 - k. 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.
 - l. Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.
 - m. Non-Owned Automobile Liability - Coverage for suits against the Contractor resulting from the use of hired or non-owned vehicles.
 - n. Advertising Injury: While not limited to, the endorsement must include coverage piracy or misappropriation of ideas, or infringement of copyright, trademark, title or slogan.
 - o. All Risks Tenants Legal Liability - to protect the Contractor for liabilities arising out of its occupancy of leased premises.
 - p. Amendment to the Watercraft Exclusion to extend to incidental repair operations on board watercraft.
 - q. Sudden and Accidental Pollution Liability (minimum 120 hours): To protect the Contractor for liabilities arising from damages caused by accidental pollution incidents.
 - r. Litigation Rights: Pursuant to subsection 5(d) of the [Department of Justice Act](#), S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:

*Director Business Law Directorate,
Quebec Regional Office (Ottawa),
Department of Justice,
284 Wellington Street, Room SAT-6042,
Ottawa, Ontario, K1A 0H8*

For other provinces and territories, send to:

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Buyer ID - Id de l'acheteur
HAL201
CCC No./N° CCC - FMS No./N° VME

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

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

G2001C (2018-06-21)

C3 Limitation of Contractor's Liability for Damages to Canada

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.

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. This limitation of the Contractor's liability does not apply to:

any infringement of intellectual property rights; or

any breach of warranty obligations

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.

N0001C (2008-05-12)

ANNEX “D”

WARRANTY DEFECT CLAIM PROCEDURES AND FORMS

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

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

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

3. Warranty Conditions

a. 2030 General Conditions - Higher Complexity - Goods are augmented by clauses incorporated into the subject Contract.

b. The warranty periods may be stated in more than one part:

i. 90 days commencing from the day the PWGSC 1205 Acceptance Document is signed for workmanship provided by the contractor for the refit work specified;

ii. 365 days from the date of 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 warrantor's 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 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 attached and forward the original to the Contractor for review with a copy to the PWGSC Contracting Authority. If the PWGSC Contracting or Inspection Authority is unable to support warranty action, the Defect Claim Form will be returned to the originator with a brief justification. (It is to be noted that in the latter instance PWGSC will inform the Contractor of its decision and no further action will be required of the Contractor.

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

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

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

c. When a warranty defect claim is disputed by the Contractor, the Technical Authority may arrange to correct the defect by in-house resources or by contracting the work out. All associated costs must be tracked and recorded as a possible charge against the contractor by PWGSC action. Material costs and man-hours expended in correcting the defect are to be recorded and entered in Section 5 of the warranty defect claim by the Technical Authority who will forward the warranty defect claim to the PWGSC Contracting Authority for action. Defective parts of equipment are to be retained pending settlement of claim.

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

6. Liability

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

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

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

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

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

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

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.

Solicitation No. - N° de l'invitation
F5561-220665/A
Client Ref. No. - N° de réf. du client
F5561-22-0665

Amd. No. - N° de la modif.
File No. - N° du dossier
HAL-2-89075

Buyer ID - Id de l'acheteur
HAL201
CCC No./N° CCC - FMS No./N° VME

APPENDIX 1 to ANNEX D



Public Works and Government
Services Canada

Travaux publics et Services
gouvernementaux Canada

**Warranty Claim
Réclamation De Garantie**

Vessel Name – Nom de navire	File No. – N° de dossier	Contract No. - N ° de contrat
Customer Department – Ministère client	Warranty Claim Serial No. Numéro de série de réclamation de garantie	
Contractor – Entrepreneur	Effect on Vessel Operations Effet sur des opérations de navire Critical Degraded Operational Non- operational Critique Dégradé Opérationnel Non- opérationnel	
1. Description of Complaint – Description de plainte		
Contact Information – l'information de contact		
Name – Nom		Tel. No. - N ° Tél
Signature – Signature		Date

Solicitation No. - N° de l'invitation
F5561-220665/A
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CCC No./N° CCC - FMS No./N° VME

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

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

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

Date of Corrective Action - Date de modalité de
reprise

Client Name and Signature - Nom et signature de client

Date

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

Signature – Signature

Date

5. Additional Information – Renseignements supplémentaires



PWGSC-TPSGC

ANNEX "F"

FINANCIAL BID PRESENTATION SHEET

Proposed Work Period Location: _____

1. Evaluation of Price

a)	Known Work For work as stated in Part 1, specified in Annex "A" and detailed in the attached Pricing Data Sheet for a FIRM PRICE of:	\$ _____
b)	Unscheduled Work – Regular Labour Rate Estimated labour hours at a firm Charge-out Labour Rate, including overhead and profit: 500 person hours X \$ _____ per hour for a PRICE of:	\$ _____
c)	Daily Services Fees i) Three (3) working days on drydock X \$ _____ = \$ _____ ii) Two (2) non-working day on drydock X \$ _____ = \$ _____ iii) Two (2) working days at berth X \$ _____ = \$ _____ iv) One (1) non-working day at berth X \$ _____ = \$ _____	\$ _____
d)	Vessel Transfer Cost As stated in Part 2.	\$ _____
e)	EVALUATION PRICE HST Excluded, [a + b + c + d]: For an EVALUATION PRICE of :	\$ _____

2. Unscheduled Work

2.1 Price Breakdown:

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

2.2 Pro-rated Prices:

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

2.3 Payment for Unscheduled Work:

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

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

3. Overtime

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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 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.

4. Daily Services Fee

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

The firm daily services fee is:

- (a) For a working day on the drydock \$ _____
- (b) For a non-working day on the drydock: \$ _____
- (c) For a working day at the berth: \$ _____
- (d) For a non-working day at the berth: \$ _____

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

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APPENDIX "1" to ANNEX "F" PRICING DATA SHEET

The Pricing Data sheet will be provided with the minutes of the bidder's conference as a Solicitation Amendment and will be titled **Pricing Data Sheet**.

ANNEX "G" to PART 5 - BID SOLICITATION

FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY – CERTIFICATION

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

For further information on the Federal Contractors Program for Employment Equity visit [Employment and Social Development Canada \(ESDC\) – Labour's](#) website.

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

Complete both A and B.

A. Check only one of the following:

- A1. The Bidder certifies having no work force in Canada.
- A2. The Bidder certifies being a public sector employer.
- A3. The Bidder certifies being a [federally regulated employer](#) being subject to the [Employment Equity Act](#).
- A4. The Bidder certifies having a combined work force in Canada of less than 100 employees (combined work force includes: permanent full-time, permanent part-time and temporary employees [temporary employees only includes those who have worked 12 weeks or more during a calendar year and who are not full-time students]).

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

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

OR

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

B. Check only one of the following:

- B1. The Bidder is not a Joint Venture.

OR

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

CANADIAN COAST GUARD ATLANTIC REGION

CCGS PEDDLE



DRY DOCKING AND REFIT SPECIFICATION

SPECIFICATION NO.:

22-G028-010-1

REQUISITION NUMBER:

**F5561-220655
Jan 10 – Mar 7th, 2023**

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GENERAL NOTES

ON-SITE PROJECT OFFICER: All the specified work, as well as all work arisings, must be completed to the satisfaction of the **Coast Guard Technical Authority (CGTA/TA)**. Upon completion of each item of the specification, the CGTA must 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), classification societies or alternate authority identified by the CGTA.

SAFETY: Vessel must be under Contractor's Safety Management program while under their Care & Custody. Potential Contractor's must 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 must apply.

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.

SCHEDULE: At the Pre-Refit Meeting, the successful Contractor must provide a Production Bar Chart or Schedule showing commencement and completion dates for each item in this specification. This document must highlight any critical dates and be capable of showing the effects of late completion date of the work package. Contractor must provide updated Production Schedules to the CGTA, and Public Service and Procurement Canada (PSPC) whenever the schedule is revised.

SAFE WORK CERTIFICATES:

Contractor must obtain Marine Chemist Certificates in accordance with TCMSS TP 3177E before any cleaning, painting or hot work is commenced in confined spaces or machinery compartments, Contractor and subcontractor personnel issuing these certificates must be fully trained, qualified and certified in accordance with Canada Labour Code (CLC) requirements and all relevant provincial legislation. Certificates must clearly state the type of work permitted and must 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 must fully comply with all provisions therein.

CONFINED SPACE:

For all work requiring entering or working in confined spaces; Contractor must 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 must 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 must make use of a qualified rescue team. This team must be used at all times when tanks or confined spaces are to be entered. The costs associated with all

GENERAL NOTES

known work requiring the services of a confined space rescue team must be the responsibility of Contractor.

WELDING: All welding work must be performed in accordance with all of the requirements of the Canadian Coast Guard Welding Specification CT-043-EQ-EG-001, March 2014, EKME#3049715v3A.

CONTRACTOR REQUIREMENTS

Steel Structures

All welding contractors must be certified by the Canadian Welding Bureau (CWB) to CSA Standard W47.1 Division 1 or 2 for new construction and work packages other than new construction.

Aluminum Structures

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

Welding Procedures

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

Welding Personnel

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

Performance and Qualification Testing

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

Limitations Prior to Commencing Welding Work

All Contractors must 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, must include an indication of acceptance by Contractor (by signature, seal or other appropriate means) and a stamp of acceptance by the CWB.

Governing Standards for Welding

For structural steels > 3 mm in thickness, welding must meet the requirements of CSA Standards W47.1 and W59, except as modified by the Canadian Coast Guard Welding CT-043-EQ-EG-001, March 2014, EKME#3049715v3A.

For structural aluminum > 3 mm in thickness, welding must 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, EKME#3049715v3A.

GENERAL NOTES

INSPECTION OF WELDS

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

HOTWORK VENTILATION AND CONTAINMENT: During all known work and work arisings, that involve hotwork, Contractor must 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 must have a defined zone which must 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 must be indicated in the items contained within the known work package. All extra work arisings that involve hotwork must have a zone determined using the same logic. The zone must 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.

In areas where accommodations and or workplaces cannot be completely isolated from personal access a double sealed door (air lock) arrangement must be erected to minimize ingress of the contaminants into occupied areas. A ventilation extraction point must 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 must be sealed off to prevent all containments from getting in. Passageway branches that connect to the zone must be sealed off. Contractor must completely clean all surfaces and fabrics within a compartment that are not suitably protected.

ENCLOSURES AND HEATING: Contractor must 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.

SERVICE CONDITIONS: Unless specified otherwise, all components, materials and installations supplied by or carried out by Contractor must 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;

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

GENERAL NOTES

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

RELOCATIONS: Any piping, manholes, parts and/or equipment requiring temporary relocation to carry out specified work, or to gain access, must be refitted upon completion with new jointing, anti-seize compound, clamps and brackets as applicable (Contractor supply). All equipment and systems, so disturbed, must be tested to prove correct function and fluid integrity upon completion. Defects must be corrected at Contractor's cost. **NOTE:** It is Contractor's responsibility to identify equipment and systems that must be tested to verify correct function, prior to being disturbed for required work.

LIGHTING: Temporary lighting and/or temporary ventilation required by Contractor to carry out any item of this specification must be supplied, installed and maintained in safe working condition by Contractor and removed on completion of the related work. Naked light bulbs or tubes must not be used as temporary lighting inside the vessel. All lights used in the vessel must be supplied with approved guards.

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 must be removed to the garbage container(s) each day. The costs associated with the removal of dirt, debris, and garbage must be included in the quote.

INSPECTION: Contractor must be responsible for calling in the services of ABS, and HC Inspectors when and as required for survey and inspection items. Contractor must keep a record of all inspection services used (time and date/nature of the work) and submit to the CGTA at the end of the refit. CCG pays for ALL inspection services for the full duration of the refit period.

CORRESPONDENCE & REPORTS: Unless otherwise agreed upon, all electronic correspondence, reports, certificates and drawings presented to the CGTA must be in English. All reports must be computer generated and provided in **English**. Additional copies may be submitted in French.

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

Upon delivery of the vessel, a compilation of all reports, drawings and correspondence must be provided on a usb drive to CGTA

PAINTING: Unless specified otherwise, replacement and/or disturbed steelwork must be given a minimum of two (2) coats of Intershield 300 bronze Epoxy; each coat must be of contrasting colour. **Lead-based paints must not be used.** Prior to painting, all new and disturbed

GENERAL NOTES

steelwork must be power tool cleaned as a minimum standard of surface preparation. Contractor must 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 must result in another coat being applied at Contractor's expense.

MATERIALS & TOOLS: All materials, unless otherwise specified, must 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 must 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. Contractor must provide power and air for any tools required, the ship's supply must not be used.

MEASUREMENTS: All dimensional measurements must be taken and recorded in inches. Unless otherwise specified, the dimensions must be taken and reported in thousandths of an inch (0.000 inch). All measuring devices must be described on the submitted reporting sheets. All reported dimensions must be either typed or printed in a neat legible manner, and must include the name of the person who took the readings.

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 must 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.

SMOKING: The Public Service Smoking Policy forbids smoking in Government ships in all areas inside the ship where shipyard personnel will be working. Contractor must inform workers of this policy and ensure that it is complied with in all cases.

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 must ensure that no workers bring meals onboard the ship

INSPECTION & GUIDANCE: During this contract, Ship's Crew and Regional Staff will be onboard conducting inspections and providing guidance to Contractor personnel.

HAZARDOUS MATERIALS: There are no locations having Asbestos Containing Materials (ACM) and Lead Paint.

GENERAL NOTES

PROTECTION OF EQUIPMENT

Contractor must take measures to ensure that all surfaces and items of material or equipment installed on the vessel, finished surfaces, final color coats and other finished work must be protected against damage, soiling, and/or contamination.

All electrical and electronic equipment and components must be protected during the execution of the specified work against damage by direct or indirect physical contact or by the effects of adverse temperatures or other environmental conditions. Any damage to surfaces, equipment, furnishings or decor incurred prior to acceptance by Canada must be returned to "As Delivered" condition by Contractor at no expense to Canada. All openings in machinery and/or systems prior to connections being made must be kept covered by inserts or covers at all times.

Contractor must obtain and follow instructions from its sub-Contractors for any special protection required for sub-Contractor furnished equipment during the specified work. Such instructions must be made available to the CGTA and ABS. Contractor must ensure that the ship's machinery, equipment and systems are protected from all hazards, including but not limited to damage from ongoing work, corrosion, sandblasting (directly or indirectly), paint over, hot work, adverse temperature or other environmental conditions and contaminants.

1 - SERVICES

1. GENERAL: The following services must 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 must be responsible for any additional connections required when ship is moved between dock/slipway and alongside berth at Contractor's premises.
2. UNMANNED REFIT: During the majority of the contract period, the CCGS Peddle will be unmanned. As a result, the ship must be placed in the care and custody of Contractor as described in this specification. However, access to the vessel must not be denied to CCG, Public Service Procurement Canada (PSPC) personnel by the Contractor. Every effort will be taken to ensure that vessel access by these personnel must not interfere or conflict with the Contractor's work.
3. CCG / PSPC Offices: For the period of the Contract, the Contractor must provide furnished office accommodations for authorized representatives of Canada including the provision of high speed wireless internet service.

The above office furnishings and accommodations are to be made available for three (3) representatives of Canada only and may not be occupied at all times during the period of the Contract. During periods of non-occupancy the Contractor may make other uses of the office accommodations as required.

Contractor must provide portable washroom facilities for 6 Crew members, including handwash stations. Ship's sanitary water and sewage system will be down for the duration of the docking and the attending crew members will require both of the above mentioned items.

4. CARE AND CUSTODY: During the contract period, the ship must be placed in the custody of Contractor who must be responsible for all safety and security matters pertaining to the vessel. As the ship will not be de-stored, Contractor must provide whatever security arrangements are required to safeguard CCG and DFO equipment and material that remain onboard during the contract period.
5. Security: During the Contract period, the Contractor must provide and maintain continuous, 24 hour-per-day, 7 day-per-week security measures to in relation to the vessel. The Contract must utilize security measures that are adequate to ensure integrity against personal injury, fire and flood in accordance with Part II of the Canada Labour Code, as well as to ensure that the ship remains free from damage, vandalism and/or theft resulting from unauthorized entry or activity.

At a minimum, the Contractor's security measures must include, but are not limited to: Controlled access to the worksite with a lock and key, key card access, and/or gate code, as well as fencing or other physical barriers in place to stop unauthorized personnel from accessing the worksite. Adequate lighting at the worksite day or night, to ensure the vessel is visible and may be observed clearly and without obstruction from a distance of at least 100M. High Definition Video Monitoring to capture the vessel and the surrounding worksite directly on a 24hr continuous basis with the capability that any video monitoring data can be transferred to an external computing or digital storage device.

6. **TURNOVER:** The turnover of the ship to and from Contractor must be carried out on a compartment-by-compartment basis with a Contractor's Representative, and Captain (or Representative) in attendance.

As part of the initial turnover, digital photographs will be taken by the CGTA with Contractor Representative in attendance consisting of a minimum of four photographs per space. USB copies of the photographs will be distributed to Contractor, CCG Representative and the PSPC and must be accepted as representative of the condition of the vessel at turnover.

On completion of the photographic survey and compartment inspections, CGTA must provide Contractor's Representative with keys as required for access to all areas of the ship's interior spaces. Turnover to the Contractor must be finalized by completion of an "Assumption of Custody Certificate" to be supplied by PSPC.

When custody is returned to CCG, a "Resumption of Custody Certificate" must be completed after completion of a second compartment inspection survey and return of all keys to CGTA.

7. **DOCKING:** Contractor must 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 must be maintained between the vessel's Commanding Officer and Contractor's Docking Officer.
8. **GANGWAYS:** Contractor must 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 must be installed in such a manner that they provide separate routes for escape in the event of fire. CGTA will advise of specific locations.

Safety nets must be in compliance with the Canada Labour Code. Gangways must be safe, well-lit and structurally suitable for the passage of shipyard personnel and the ship's crew. Contractor must 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 must 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 must be at his cost.

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

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

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

KWH= Kilowatt -hour (kWh)

I= Current (A)

E = Voltage (V)

P.F= power factor

A ground cable must be attached to the ship's hull. Contractor must 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 must 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.

10. GARBAGE: A garbage container, 6 m³ (215 Ft.³) minimum capacity, strictly for ship's use must be placed in a convenient location as close as possible to the ship's gangway. Contractor must provide this service for the duration of the refit. The bin must be emptied on a regular basis to negate the problems of odors.
11. CRANAGE: Contractor must bid on supplying general services of a dockside crane, driver and rigger for twenty (20) hours during the dry-docking period as and when required by the CGTA, plus an hourly rate for PSPC 1379 adjustment purposes.
12. WASTE OIL: Contractor must 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 per litre for PSPC 1379 adjustment purposes. Removal and disposal must 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 must be given to the CGTA. Copies of invoices detailing disposal of the liquids must be given to the CGTA.
13. CLEANING: Contractor must 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 must be included in the quote for each specification item.
14. PARKING: Sufficient parking for DFO/CCG and PSPC representatives must be provided conveniently close to the berthed or docked vessel. Contractor must provide five (5) clearly designated for “DFO/CCG and PSPC use only” parking spaces for the duration of the docking period.
15. ALLEYWAY AND BULKHEAD PROTECTION: Alleyways and area that must be used by Contractor's personnel on a regular basis for access to required work areas must be suitably protected from damage, soil, etc. All affected alleyways must have deck surfaces covered by at least 6mm of protective deck covering like Masonite or Blue Diamond extending to the full extremities of the areas dealt with. All seams, butts, and edges of the applied deck covering must

be taped to discourage ingress of soil beneath, as well as to stop any migration of the applied sections. Contractor must quote on supplying and installing 150 square meters of 6 mm deck covering, rough one side and installed rough side up. Upon completion of refit, Contractor must lift all deck and bulkhead coverings. The area must be swept and mopped on completion of the refit and any tape residue must be removed. Contractor must supply unit pricing for the installation of deck covering so that the final quantity of used deck covering can be adjusted via PSPC 1379 process.

All internal bulkhead panels in the above-noted areas must be suitably protected with application of 3mm thick bulkhead panels (or heavy construction paper) extending to a minimum 1.5 m height above the deck level and all corners must be covered and taped. Again, all butts, seams and edges must be taped. Contractor must quote on supplying and installing 100 square meters of 3 mm (at least) bulkhead covering. Upon completion of refit, Contractor must remove all bulkhead coverings and dispose of them. The areas must be wiped clean on completion of the refit and any tape residue must be removed. Contractor must supply unit pricing for the installation of bulkhead covering so that the final quantity of used bulkhead covering can be adjusted via PSPC 1379 process.

16. SCAFFOLDING: Contractor must 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 a surveyor from ABS and ship's personnel. This will include scaffolding and equipment to access propellers, rudder, thruster and renewal of anodes. The scaffolding must be removed when the work is complete, at Contractor's expense.
17. GASOLINE TANKS: Contractor must remove the port and starboard gasoline tanks from the vessel and store the tanks so that they are protected from the weather for the duration of the dry-docking. All gasoline must be removed and disposed of according to provincial and federal regulations. After all dry-dock work is complete the contractor must reinstall the gasoline tanks. Cranage required to do the work is covered under the Cranage section (Section 12) in Services.

2 – PRODUCTION CHART

1: SCOPE:

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

2: TECHNICAL DESCRIPTION:

2.1 General

1. Production Chart

1. Contractor must supply three copies of a detailed gantt chart showing the planned work schedule for the ship's refit. All copies must be in colour as per the originals.
2. This bar chart must show, for each specification item, the start date, the manpower loading, the duration and the completion date. The chart must also highlight any critical paths.
3. The production chart must 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. Three electronic copies of the production chart must be given provided to the Chief Engineer, the CCG technical authority and the PSPC contracting authority, 24 hours prior to each production meeting to allow for review and planning.
4. The production chart must clearly indicate the arrival/departure dates of any Subcontractors/Field Service Representatives.
5. The production chart must include the status and production on each PSPC 1379 arising.
6. A copy of the original bar chart must be provided via email to the PSPC contracting Officer and SVMM (CCG technical authority, Jeffrey.mercier@dfm-mpo.gc.ca) before the close of business on the day of the ships arrival at the Contractors premises.

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 must provide a weekly production chart and excel spreadsheet for subcontractor allowances every week on the timelines indicated.
2. ITP must be delivered at the pre refit meeting. CGTA reserves to the right to make any changes to the contractor created ITP.

5.2 Spares

1. N/A

5.3 Training

1. N/A

HD-01 BERTHING AND MOORING

1: SCOPE:

The intent of this specification item is for the Contractor to provide berthing services. During the contract period at the Contractor's facilities, while not in dock, the vessel must be berthed at the contractor's wharf at a safe and secure berth with adequate water levels at extreme low tide to ensure that the vessel will not touch bottom.

2: TECHNICAL DESCRIPTION:

2.1 General

1. The vessel will be delivered to the Contractor's facility under its own power.
2. Contractor is to include in their overall bid, all costs for initial tying up, any movement of the vessel during refit, and letting go of lines from Contractor's wharf on departure after completion of contract. Contractor is responsible for supplying all necessary lines for securing the vessel at their facility.
3. Maneuvering of the vessel into and of contractor's docking facilities is the responsibility of Contractor. Costs for tugs and pilots required for any movements of the vessel during the contract period must be included in the bid price, shown as a separate cost.
4. One gangway must be supplied at the Contractor's jetty. This gangway must be set up and rigged from the wharf onto the aft main deck, complete with safety net. Gangway must be well lit and structurally sufficient to support passage of the Contractor's workmen and the ship's crew. The supplied gangway must be in accordance with the provisions stipulated in the tackle regulations as well as the safe working practices regulation made pursuant to the Canada Shipping Act and the Marine Occupational Safety and Health Regulations, Part 2 on Temporary Structures made pursuant to the Canada Labour Code, Part 2.

5. Vessel Particulars:

Length Overall = 42.8 m
Breadth Overall = 7.0 m
Draft = 2.8 m

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 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. N/A

5.2 Spares

1. N/A

5.3 Training

1. N/A

HD-02 DRYDOCKING

1: SCOPE:

Contractor must 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 must be made available to Contractor.

2: TECHNICAL DESCRIPTION:

2.1 General

1. Dry docking must be under the direct supervision of a Certified Docking Master. Prior to docking the vessel, Contractor must 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 must 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 must supply the services of divers to confirm that the vessel is setting evenly on the bilge and keel blocks.
3. Contractor must quote a unit daily service day cost on dock. This cost must form part of the overall quote.
4. Docking must be undertaken during the first two days of refit. If necessary, Contractor must prepare the dock in advance of the ship's arrival and the official start date of the contract period.
5. Ship's personnel will be responsible for all line handling onboard the vessel only during the initial docking and final undocking operations. Contractor must supply personnel on the dock walls and ashore for all line handling.
6. Contractor must ensure that docking blocks are clear of transducer faces and sea bay access covers.
7. The Contractor must make sure enough room between the block, the speed log and the echo sounder (Note the sounder is actually being replaced in T-01 and access will be needed).

8. Two gangways must be supplied and set up by Contractor while the vessel is drydocked. These gangways must be set up and rigged from the wharf onto the buoy deck, complete with safety net. Gangways must be safe, well-lit and structurally sufficient to support passage of Contractor's workmen and ship's crew.
9. During undocking Contractor must 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.
10. Contractor must quote a unit cost on the removal of keel blocks as well as a unit cost on the insertion of keel blocks. This quote must 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

HD-02 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

HD-03 HULL INSPECTION /BUTTS AND SEAMS

1: SCOPE:

The intent of this specification item is for Contractor to repair welded joints in hull plating as identified in a hull survey by the ABS surveyor and CGTA. To be completed in conjunction with specification item HD-05 Hull Cleaning and Painting.

2: TECHNICAL DESCRIPTION:

2.1 General

1. Contractor must arrange for the ABS Class inspection of the underwater hull area shell plating and paint system condition. Inspection to be scheduled upon completion of hull cleaning and within 48 hours of docking. Contractor to note that this inspection also includes the bow thruster tunnel. The ABS surveyor's hull inspection will determine those areas that require weld renewal. Joints selected for repair will be marked and must be cleaned to sound metal by air arc gouging and / or grinding. Joint welds are then to be built up to the original level by the ABS approved welding techniques with approved materials. All work must be to the approval of the ABS and the CGTA. Prior to commencing repair Contractor must inform the CGTA and provide a copy of their welding procedure.
2. The underwater hull survey inspection must be carried out in accordance with the Classification Society's survey requirements for a vessel of this type.
3. For bidding purposes, Contractor must include in their overall bid price the cost of 50 feet of air arc gouging, 50 feet of bead weld, and 10 MPI/dye penetrant/UT. Contractor must include cost per foot for each of air arc gouging and bead welding for adjusting purposes.
4. Butts and seams bordering fuel tanks will require the fuel tank to be pumped down by the vessel's crew. Contractor must gas free and certified safe for hot work after they remove and dispose of any remaining fuel in accordance with all Federal, Provincial and Municipal regulations. Disposal certificates must be provided to the CGTA.
5. Butts and seams bordering ballast/void tanks that have coated internals will require interior paint work to be touched up because of heat damage. The foregoing gas freeing and paint work will be handled through PSPC 1379 action.
6. Contractor must supply all scaffolding, materials, equipment, and personnel to arc gouge and re-weld the existing deteriorating welds as identified by the ABS surveyor on both sides of the vessel. Contractor to quote on the services of a person lift and operator for 8 hours for survey and inspection purposes. Contractor to quote hourly rate for this work.
7. Upon completion of all work, NDT (UT or Mag particle or equivalent) must be carried out by a qualified technician in areas chosen by the attending ABS surveyor. Contractor must schedule the attendance of a certified NDT Technician along with the ABS surveyor. The ABS surveyor will direct the NDT technician as to areas that require inspections.

8. In addition to the above work, Contractor must provide a cost on the following in their bid;
 - a) Unit cost per additional foot of arc gouging.
 - b) Unit cost per additional foot of welding.
 - c) Unit cost per additional MPI/UT/dye penetrant.
 - d) Unit cost for gas free certified.

9. Contractor must schedule the ABS surveyor to inspect and credit repairs, prior to coatings application. All new and disturbed steel must be prepared and coated in conjunction with HD-06 Hull Cleaning and Painting. Contractor must carry out all ABS specified repairs.

10. Contractor must ensure a survey credit is obtained from ABS for the inspection and certification of the shell plating. Contractor must present this survey credit to the PSPC and the CGTA prior to the flooding of the dock to re-float the vessel. Contractor must notify the PSPC and the CGTA so that these authorities may witness the shell plating inspection by the ABS surveyor.

11. Emergency escape hatches: The Contractor must conduct an inspection of the 3 exterior emergency escape hatches. The following items must be checked: condition of seal/gasket, coating on the hatch, existence of corrosion, condition of closing springs, wear to seat, condition of the drain pipe and ball valve. Contractor must conduct a standard fire hose test for water tight integrity. Any defects noted during this inspection will be addressed via PSPC 1379 action. Reference drawings AF6098-O-8994-101_001 and AF6098-O-8994-101_002 have been provided in the TDP in case any repairs are needed.

2.2. Location

1. All work must 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. Contractor is responsible for protecting surrounding area and equipment while carrying out this work.

3: REFERENCES:

3.1 Guidance Drawings/Nameplate Data

Drawing Number	Description	
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	
AF6098-63100-01_AF	Paint 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. At a minimum the following Coast Guard Standards and or Technical Bulletins must be adhered to in the course of executing this specification. Copies of these standards and bulletins can be obtained from the CGTA.
 - a. Canadian Coast Fleet Safety Manual (DFO 5737)
 - b. Coast Guard ISM Lock Out/Tag Out Procedures
 - c. Canada Shipping Act, 2001 (2001, c. 26) Hull Inspection Regulations (C.R.C., c.1432)
 - d. ABS, Rules & Regulations for the Classification of HSC (High Speed Craft)
2. All hotwork must be done in accordance with CCG Welding Specification CT-043-EQ-EG-001E (EKME#3049715v3A)

3.3 Production Chart & Subcontractors Allowances

1.N/A

3.4 Owner Furnished Equipment

1. Contractor must 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 must afford the CGTA or delegate (C/E) the opportunity to witness the ABS's inspection of the underwater hull prior to and following all prescribed repairs.
2. All work to be completed to the satisfaction of the ABS surveyor and the CGTA.

4.2 Testing

1. Contractor must include the cost of 10 non-destructive tests on the new welds; these tests must be as directed by the attending ABS surveyor. Contractor must supply a report to the CGTA on the NDT readings along with a detailed drawing showing each measurement location.

4.3 Certification

1. Contractor is responsible for arranging the ABS surveyor for all required inspections in order to obtain credit towards the vessel's continuous hull and machinery survey **(ITP)**.
2. Prior to the close of contract, certification or other documentation must 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 must be provided in digital format to the CGTA. At a minimum this report must include all reading taken, NDT readings, drawings, certificates, results/recommendations, etc. identified in this specification item **(ITP)**.
2. Following the ABS underwater hull inspection and prior to carrying out any identified repairs, Contractor must submit in PDF format a copy of drawing AF6098-10000-03_AF Shell Expansion outlining in red all proposed plate repairs.

5.2 Spares

1. N/A

5.3 Training

1. N/A

HD-04 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. Contractor must remove all anodes from the vessel and grind smooth all previous anode welded connections. Contractor must fit new anodes in the same locations as the removed anodes. This must be done after the hull coating has been applied. All weld areas must be touched up with the hull coating after the anodes have been fitted.
2. All anodes / other protection must be removed after completion of the coating application. Any anodes that are covered with coating must be renewed at Contractor's expense.

Anode Summary:

Hull Anodes

- a) The Contractor must replace all sacrificial hull anodes MM28AB (20 in total).
- b) Replacement hull anodes, type MM 28AB, will be Contractor supplied

Sea chests/seabay/fire pump suction

- a) The Contractor must replace three anodes, one in each of the three sea chests.
- b) The Contractor must replace one anode in single Fire Pump suction sea chest.
- c) Replacement anodes, type MM 26A, will be Contractor supplied.

Bow thruster tunnel

- a) The Contractor must replace all four Bow Thruster Tunnel anodes, two on each side of the propeller
- b) Replacement anodes, type MM 26A, will be Contractor supplied.

MME 28AB



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

MME 26A



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

Bow thruster anodes

a) The Contractor must replace the two cone shaped anodes, one on each side of the propeller.

Replacement anodes (Type TRAC 24) will be provided by the contractor.

The Contractor must install the cone shaped anodes in accordance with Manual No.: 29351 24 TRAC ASSY.

- 3. All anodes must be protected from the coating material being applied in the sea chest areas during the work execution of paint process. All anode protection must be removed after completion of the coating application. Any anodes that are covered with coating must be renewed at Contractor's expense.

2.2 Location

- 1. Hull Area

2.3 Interferences

- 1. N/A

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	

3.2 Standard and Regulations

1. Canada Shipping Act, 2001 (2001, c. 26) Hull Inspection Regulations (C.R.C., c.1432)
2. ABS, Rules & Regulations for the Classification of HSC (High Speed Craft)

3.3 Owner Furnished Equipment

1. N/A

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. Contractor must afford the CGTA or delegate (C/E) an opportunity to witness the ABS inspection of the anodes prior to, and following all prescribed renewing.

4.2 Testing

1. N/A

4.3 Certification

1. Prior to the close of contract, certification or other documentation must be submitted to the 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 must be submitted to PSPC and CGTA **(ITP)** .

5.2 Spares

1. N/A

5.3 Training

1. N/A

HD-05 STORM VALVES & SEA CONNECTIONS INSPECTION

1: SCOPE:

The intent of this specification item is for Contractor to remove, disassemble, clean and layout for ABS inspection all storm valves and sea connections. The Contractor must start this specification item in the first week of refit to ensure any failed valves will have enough time to be replaced before the end of the docking period.

2: TECHNICAL DESCRIPTION

2.1 General

1. Contractor must ensure all applicable safety precautions including equipment lock outs and tag outs are implemented prior to the start of work.
2. Contractor must 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 must be as per original and in accordance with manufacturer's specifications.
3. Contractor must 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 must give the CGTA a copy of their hand written record indicating the findings and recommended repairs.
4. Contractor must remove, disassemble, clean and layout for ABS inspection all sea connections listed below.
5. Prior to reassembly and installation, Contractor must arrange for a viewing by the attending ABS surveyor and CGTA, to inspect all valves as listed below **(ITP)**.
6. Following inspection, all original valves must have their seats and discs ground in. Final lapping must be done to ensure the valve disc makes full contact with the valve seat around their entire circumference. All valves must be reassembled using new Contractor Furnished Materials (CFM) packing and gaskets.
7. Contractor must include in their bid 20 hours of machining time for repair of any storm valves or sea connections. The Contractor must submit a unit cost for machining time with their bid, the final cost will be adjusted via PSPC 1379 action.
8. Where a valve is beyond serviceable, contractor supplied replacement valves must be installed. The replacement valves must be ABS approved, the same material, class of service and style as the condemned valve.
9. All valves that are deemed to beyond serviceable will be considered unscheduled work and will be replaced by way of PSPC 1379 action. All new valves will require pressure testing before install.
10. All threaded fasteners and valve spindles are to be coated with anti-sieze compound during reassembly.

11. All flange gaskets disturbed as a result of the valve servicing process must be renewed using new CFM gasket material suitable for sea water piping.

2.2 Location

	ID	Description	Location
	V256001	Main Isolation Port	MMR Port Fwd
	V256002	Main Isolation Stbd	MMR Stbd Fwd
	V256003	Fwd Sea Chest Isolation	Bow Thruster Rm
	V256007	Port Sea Chest Re-circulation	MMR Ctr Fwd
	V256008	Stbd Sea Chest Re-circulation	MMR Stbd Fwd
	V256010	Port Sea Chest Vent	MMR Ctr Fwd
	V256011	Stbd Sea Chest Vent	MMR Stbd Fwd
	V256012	Fwd Sea Chest Vent	Bow Thruster Rm Port
	V256013	Port Sea Strainer Outlet	MMR Fwd
	V256014	Stbd Sea Strainer Outlet	MMR Fwd
	V256018	PS Main Engine Supply	MMR Fwd
	V256022	SB Main Engine Supply	MMR Fwd
	V256042	Fwd Sea Strainer Outlet	Bow Thruster Rm
	V256090	Cooling Water Supply Header Vent	MMR Fwd
	V256136	SW for Fridge	MMR Fwd
	V555017	Emergency FM Supply	Bow Thruster Room
	V520055	Bilge Eductor Supply	Bow Thruster Room
	V256020	SW to GS Pump	MMR Stbd Fwd
	V520015	FM Supply	MMR Fwd

Storm Valves

	ID	Description	Location
	V526023	Fuel Oil Spill LCR O/B Discharge	Laundry Rm
	V526029	HVAC/DK LCR O/B Discharge	Bow Thruster Rm Port
	V526031	Wet Gear Rm O/B Discharge	MMR Port Aft

Overboard Valves

	ID	Description	Location
	V593091	Sewage Plant O/B Discharge	MMR Port Aft
	V256032	Port O/B Discharge	MMR Port Fwd
	V256035	Stbd O/B Discharge	MMR Stbd Fwd

	V256065	ACU O/B Discharge	Bow Thruster Rm Port Aft
	V256114	Stbd ME Gear Box O/B Discharge	MMR Stbd
	V256115	Port ME Gear Box O/B Discharge	MMR Port
	V256131	Cyclone Filter O/B Discharge	MMR Stbd Aft
	V520018	Bilge O/B	AMR Port Fwd
	V520019	Bilge O/B	MMR Port Aft
	V520056	Bilge Eductor O/B	Bow Thruster Rm Stbd
	V593071	O/B Discharge (Check Valve)	MMR Aft
	V256043	PS Main Engine Exhaust	Steering Gear
	V256045	PS Diesel Generator Exhaust	Steering Gear
	V256047	SB Diesel Generator Exhaust	Steering Gear
	V256049	SB Main Engine Exhaust	Steering Gear
	V530001	RO Overboard	Bow Thruster Room
	V555009	Fire Main Drain	Bow Thruster Room

Blow Down Air Valves

	ID	Description	Location
	V551061	Blow down Air Side Sea Chest (S)	MMR Stbd Fwd
	V551062	Blow down Air Bottom Sea Chest (P)	MMR Fwd
	V551070	Blow down Air RO Unit	Bow Thruster Room Stbd
	V551074	Blow down Air FWD Sea Chest	Bow Thruster Room Aft
	V551075	Blow down Air Bilge O/B valve	Bow Thruster Room Stbd
	V551076	Blow down Air HVAC ACU O/B	Bow Thruster Room Port
	V551089	Blow down Air Fire Water O/B	Bow Thruster Room Stbd
	V551126	Blow down Air Gear Box Port O/B	MMR Port
	V551127	Blow down Air Gear Box Stbd O/B	MMR Stbd
	V551128	Blow down Air Cyclone Filter O/B	MMR Stbd Aft
	V551073	Blow Down Side Discharge AMR Bilge Pump	AMR Port
	V551071	Blow Down Side Discharge MMR Bilge Pump	MMR Port Aft
	V551068	Blow Down Sewage Discharge	MMR Port Aft
	V551063	Blow Down ME Discharge O/B PS	MMR Port Fwd
	V551064	Blow Down ME Discharge O/B SB	MMR Stbd Fwd

Misc Valves

	ID	Description	Location
	V520115	Emergency Bilge Valve	MMR Fwd

2.3 Interferences

1. Contractor must identify and remove all interference items and include the costs associated with dealing with these items, including removals, storage, reinstallations and painting of disturbed metal.

3: REFERENCES:

3.1 Guidance Drawings/Nameplate data

Drawings:

Drawing Number	Description	Electronic #
AF6098-25600-01	As built 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

1. Canada Shipping Act 2001, Hull Inspection Regulations (C.R.C., c. 1432)
2. ABS, Rules & Regulations for the Classification of HSC

3.3 Allowances

1. N/A

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 must provide the attending ABS surveyor and CGTA an opportunity to inspect all valves as listed above **(ITP)**.

4.2 Testing

1. Following the completion of all valve work, Contractor must test all valves as listed above for sealing integrity at their respective maximum system operating pressures. All leaks must be repaired at the Contractor's expense prior to the closing of contract.
2. The Contractor must arrange the attending ABS surveyor, the 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 must 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 valve replacements, all pressure testing information must be submitted to the CGTA **(ITP)**.

5.2 Spares

1. N/A

5.3 Training

1. N/A

HD-06 HULL CLEANING AND VESSEL PAINTING

1: SCOPE:

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

2: TECHNICAL DESCRIPTION:

2.1 General

1. The existing hull coating must be repaired and/or renewed utilizing Contractor Supplied Coatings as specified below.

2. Contractor must use an International Paints (IP) NACE inspector to oversee all coating processes for all critical points within this specification. IP NACE inspector contact information:

James Brunelle
Technical Sales Representative
Marine Coatings

T 902 468 1400
F 902 468 1403
M 902 430 7332
E james.brunelle@akzonobel.com

International Paint (a division of Akzo Nobel Coating Ltd. Canada)
Suite 2, 250 Brownlow Avenue
Dartmouth, Nova Scotia
Canada
B3B 1W9

3. Contractor must prepare the underwater hull and apply the coating system in strict accordance with the manufacturer's instructions. In conjunction with any other functional quality assurance procedure as may be specified by the manufacturer, the following points must be carried out:

- Provide a list of batch numbers with correspondent dates of manufacture.
- Record the quantity and type of any solvent added.
- Measure and record the ambient conditions.
- Record details of spray tips and pressures used.
- WFT gauge readings to be taken on a regular basis during application.
- Using a calibrated DFT gauge, fifteen (15) measurements per 9.3 m² are to be taken and recorded. Upon agreement of consistency with the CGTA, fifteen (15) measurements per 93m² are then to be taken and recorded over the entire underwater hull area. All recorded information must be typewritten and two hard copies and one electronic copy in PDF format to be given to the CGTA.

4. Once the vessel has been dry-docked, the entire hull must be hydro-blasted (minimum 5000 psi) to remove any accumulated growth salt deposition and loose paint, within 24 hours of docking. This must include all underwater appendages such as rudders, speed log and echo sounder cowlings, sea chests and associated gratings (gratings to be removed to allow cleaning of the sea chests), bow thruster tubes, etc. The sea inlet grids for the bow thruster, sea chests, sea bays and underwater overboard discharge valves are to be hydro-blasted remove any accumulated growth.

5. Upon completion of high pressure wash, the hull must be inspected for paint damage by the CGTA and the Contractor. All underwater hull areas must be inspected for damage, including all plating and appendages from the keel a level line visible at approximately the 2.8m draft marks. This inspection is to be completed within 48 hours of docking. During the vessel underwater hull inspection up to the deep load line all areas with poor coating adhesion or lack of coating must be recorded on a copy of the shell expansion plan by Contractor and verified by the CGTA. These areas must be recoated as per Paint Manufacturer specification.

6. Any local requirements for protective structures (ie. Shelter around the vessel while sandblast and coating application) will be the responsibility of the Contractor and must be included in the bid price. All existing coatings removed from the vessel must be contained and disposed of in accordance with applicable territorial and federal environmental regulations.

7. Painting must be carried out only after any tank repairs are completed, hull anodes are installed, hull identity markings (excludes vinyl decals) and hull inspections are complete.

8. Intact exposed epoxy hull coating must be sweep blasted to a surface profile of 3 mils to allow adhesion of the required finished coat. In hull areas where only small amounts or sections of existing epoxy coating exist, removal of coating to bare steel must be accomplished. All bare areas of hull steel and areas where existing coating is damaged, loose, blistered, missing or otherwise compromised, must be blasted to near white standard, SSPC-SP-10. Edges of intact paint must be feathered back to a minimum of 10 mm, and blown clean with compressed air. The surface profile must have a minimum roughness of 3 mils (75 microns).

9. Contractor must 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 must not be permitted to enter into any part of the vessel or its equipment. Where such ingress may occur, the equipment and vessel must be suitably protected, while sandblasting or when painting is in progress. Any cleaning required due to failure to comply will be at Contractor's expense.

10. All underwater hull surfaces must be degreased by solvent cleaning to SSPC-SP-1 standard prior to application of coatings.

11. Upon completion of the specified surface preparations, the affected areas must be surveyed by the International Paints FSR and CGTA. The surface areas of bared steel and intact coatings must be agreed upon, recorded by the Contractor and signed-off by all parties with copies of the document for each.

12. 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 6 mils D.F.T. to bared steel areas.

Second coat: Contractor to quote on applying one (1) coat of "INTERSHIELD 300", abrasion resistant epoxy, bronze, at 6 mils D.F.T. to bared steel areas.

Third coat: Contractor to quote on applying one (1) coat of "INTERGARD 263" epoxy tie coat, light gray, at 4 mils D.F.T. to areas that were coated with INTERSHIELD 300 and areas of exposed epoxy that were swept blasted.

Fourth coat: Contractor to quote on applying one (1) coat of "INTERSPEED 640" TIN-FREE ANTIFOULING, RED, at 5 mils D.F.T. to areas that were coated with INTERGARD 263.

Fifth coat: Contractor to quote on applying one (1) coat of "INTERSPEED 640" TIN-FREE ANTIFOULING, RED, at 5 mils D.F.T. to the entire underwater hull area as described in this Specification Item.

13. New coatings must be stored, prepared and applied in full compliance with manufacturer's requirements, to provide a finished coat of no less than 17 mils D.F.T. overall. Any requirement for variance from manufacturer's instructions must be approved by the CGTA prior to proceeding.

14. New coatings must be applied with atmospheric and steel conditions acceptable to paint manufacturer and CGTA. Application conditions must be recorded by Contractor and/or paint manufacturer's representative for inclusion in the final Report to be submitted to CGTA.

15. Where ambient air temperatures may become a problem, Contractor must 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. If required Contractor is responsible for providing shelter(s) and heating required to meet the coating manufacturer's specifications and include this cost in the overall bid price.

16. Coatings application to hull steel affected by "flash" rust is not acceptable and must be corrected at the Contractor's expense.

17. Contractor must "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.

18. All hull plate openings including overboard discharges, suction, grids, etc. must be plugged to prevent the ingress of sand during sandblasting operations. In addition, deck mounted/fitted equipment, including but not limited to those listed below are to be protected during any and all sandblasting and coatings operations. Contractor will be responsible for repair/replacement of any damaged items to the satisfaction of the CGTA. Where suitably fitted closure arrangements are not available for use, protection must be made by complete coverage with heavy gauge

poly-wrap and/or canvass suitably secured against environmental elements. All applied coverings must be removed upon completion of blasting.

19. Areas of obvious concern include but are not limited to:

- All fan intakes and discharges.

- All natural ventilation intakes and/or discharges.
- All machinery exhaust pipe ends.
- Aft deck crane.
- Anchor windlass.
- Lifeboat cables and blocks.

20. All hull-mounted equipment such as anodes, echo sounders, speed log, transducers, ship side valves, propellers, bow thruster, rudder bearings and its cover, etc. must be suitably protected against damage during cleaning of the hull, grit blasting and application of the coatings. Contractor is responsible for repair / renewal of any such damaged items.

21. Contractor must 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 must not be blocked by the coating.

22. Total underwater hull area is approximately 330 square meters. Contractor to quote on blasting approximately 20 square meters to bare steel and coated as specified previously, the remainder of the hull being swept blasted if the epoxy coating is exposed, meaning Contractor must quote on sweep blasting 310 square meters. Contractor must provide a unit cost per square meter for sandblasting to bare steel, unit cost for sweep-blasting per square meter and a unit cost per square meter for coating application as previously specified. Actual area dealt with must be agreed upon by the CGTA and Contractor and will be adjusted through PSPC 1379 action.

23. Contractor to plug all deck scuppers and discharges, or take whatever means required to prevent water and other liquids from contaminating hull areas being coated or prepared for coating application. Contractor must be responsible for removing these plugs upon completion of underwater hull work.

24. Contractor must remove from the vessel all traces of sand and/or grit used for blast cleaning. Contractor must be responsible and liable for ensuring that the hull is clear and clean, prior to, during and immediately after the application of coatings.

25. All above water line surfaces, accommodation area, scuttles, port holes, windows, deck machinery, susceptible to damage from surface preparation and coating application overspray must be protected accordingly.

26. Contractor is responsible for the cleanup of all blasting grit, debris and overspray from the vessel's interior and exterior decks.

27. The Contractor must include in their bid price the recovery of all grit blasting substrate, this must include but not be limited to all paint, debris and grit as well as the disposal thereof. This recovery and disposal of the substrate must be completed in accordance with all applicable provincial/federal regulations.

28. Draft Markings

1. Contractor must 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. **Draft marks that have interspeed 640 coating applied must have two coats**

of CFM Trilux 11 white applied. The renewal of these marks must be done after the final painting and curing of the underwater hull coating.

2. Forward: Both Port and Starboard side draft markings including the 2.4M and 1.6M meter markings for a total of 10 markings must be renewed.
3. Aft: Both Port and Starboard side draft markings including the 2.0M and 2.8M meter markings for a total of 10 markings must be renewed.
4. When renewing the draft markings Contractor must 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 ABS surveyor.
5. Contractor must 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.

29. Above waterline to the top of the Bulwark area

1. Contractor must repair the affected areas between the waterline and the top of the bulwark as per the International Paints coating scheme, supplied by AkzoNobel Coatings Ltd, in the TDP. Contractor and CGTA to identify and agree upon the total square area for all disturbed / bare/corroded areas for the repairs prior to start of work. Contractor must prepare each area identified above to an SSPC – SP11 standard. Contractor must bid on repairing 25 square meters of above water line area and include the cost in their overall bid. The actual area coated will be adjusted by PSPC 1379 action. Total area is 146 square meters.

2. All bare areas as describe above, after proper preparation (adhere to paint manufacturer's recommendations) and as witnessed and approved CGTA, are to be coated with one coat of **Intershield 300 (Bronze)** applied at 5.0 mils DFT followed by one coat of **Intergard 263 (Light Grey)**, applied to achieve a dry film thickness (DFT) of 4.0 mils. A subsequent spot coat of **Interthane 990** must be applied to all areas previously coated with **Intergard 263** to achieve a DFT of 2.0 mils.

3. A final coat of **Interthane 990** at a DFT of 2.0 mils must be applied to the entire above waterline to main deck area.

30. Main deck and Bridge deck

1. The Contractor must completely remove the old coating on the ENTIRE surface area of the **main** and **bridge** deck. The vessel's HVAC fan must be turned off for the duration of this spec item. All air intakes and exhaust must be closed up so that no blast particulate enters the air plenums. All blast particulate must be contained and disposed by the contractor, according to provincial regulations. ANY sheltering/enclosures and external heating required to meet coating requirements must be supplied by the contractor. CAUTION must be taken doing this this work as to not disrupt hull/bulwark/topside coating.

2. Contractor must clean the entire main deck surface to SSPC-SP1 and abrasive blast to an SSPC-SP10. For the purpose of bidding , the Contractor must assume the approximate area for fully removing and reapplying the coating is 265 square metres. The Contractor must submit unit costs for paint application on the main/bridge deck Adjustments will be made for the actual area via PSPC 1379 action. Contractor must note that the **Main deck is Steel** and the **Bridge deck is**

Aluminum, therefore blast mediums must be chosen correctly chosen to meet the surface preparation and not damage the underlying metal. Following the above deck preparation, the Contractor must apply the following coating scheme, all coatings must be supplied by the Contractor:

Location Main Deck and Bridge Deck				Sq. Metres:	265
#	Product	Colour	DFT	Extent	Clean Up
1	Intersheild 300	Bronze	5	T/U	GTA415
2	Intersheild 300	Aluminum	5	T/U	GTA415
3	Interbond 201	Storm Grey	5	T/U	GTA415
4					
5					
Total Build:			15		

31. Contractor must apply the coating material before visible oxidation occurs. If oxidation does occur, the entire oxidized surface must be re-blasted to the standard specified above.

32. All staging, cranes, screens, lighting, sheltering and any other support services, equipment, paint and materials necessary to carry out this entire specification must be CFM, installed, and removed upon completion of all work.

33. Suitable storage facilities must be provided close to the work site by Contractor 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.

34. Contractor must remove all protective materials from the machinery, equipment and hull openings on completion of the coating work. All grit, dirt, debris, rust, scale, etc. must be removed from all decks and areas of accumulation and disposed of ashore by Contractor.

35. The Contractor must restore all failed hull decals. Any materials, consumables, preparation work or staging needed will be supplied by the Contractor to complete this work. Any hull decals repairs will be completed via PSPC 1379 action.

2.1 Location

1. Vessel 's exterior hull, decking and superstructure

2.2 Interferences

1. Contractor is responsible for protecting surrounding area and equipment while carrying out this work
2. Contractor is responsible for the identification of any interference items, their temporary removal with approval from the CGTA and storage and refitting to the vessel.

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. MSPV International paints onboard coating scheme

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 must 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. N/A

3.4 Owner Furnished Equipment

1. All staging, crantage, screens, lighting and any other support services, equipment, paint and materials necessary to carry out these specifications must be Contractor supplied. Unless otherwise specified, all labour, materials, and equipment required to complete all tasks required in this specification must be Contractor supplied
2. Contractor must supply all coatings, paints, equipment, and hardware necessary for the cleaning and painting of the underwater and above water areas of the hull

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. The CGTA or delegate and ABS surveyor must inspect the entire hull for defects and deficiencies pre and post all coating work.

4.2 Testing

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

4.3 Certification

1. Contractor must provide certification for all hull coatings applied

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. Contractor must maintain a Quality Assurance reporting program, on EACH coating area which must at minimum include the following points **(ITP)** :
 - 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 the technical description.
2. All information noted above must be recorded in a in an electronic report and must be given to the CGTA and ship's staff before the end of refit.

5.2 Spares

1. N/A

5.3 Training

1. N/A

HD-07 SEA CHESTS AND STRAINERS

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 must open up the three (3) sea chests for cleaning and inspection. In addition, the two (2) main inlet sea strainers must be opened as well. The coating in each sea chest will be renewed as required. This work must be carried out in conjunction with HD-06 Hull Cleaning and Painting and HD-02 Dry Docking.
2. Sea chest grates must be removed so that internal inspection of the Sea Chests can take place.
3. Contractor must follow the coating manufacturer's recommendations and procedures when applying the coatings. Contractor must allow sufficient curing times as outlined by the manufacturer during the application of all coatings. Contractor must take random thickness readings (mils) between coats with the CGTA in attendance.
4. Contractor must note that access to the sea chests is only available via removable shell grids (one per chest). Contractor must note the location of shell grids when planning blocking arrangements for dry docking. Contractor must identify (mark) each grid being removed for their original location.
5. Contractor must 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 must be removed and disposed of ashore by Contractor. Copies of invoices detailing disposal of the debris must 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. Contractor must quote on power tooling 100 percent of the sea chest area and prepping it for coating application as per the requirements outlined in HD-06 Hull Cleaning and Painting, Underwater Hull Painting section. Contractor must bid on 10 square meters power tooling and coating repair and submit a unit cost per square meter.
8. Contractor must remove all screens from each sea strainer for cleaning and inspection. Zinc Anodes must be inspected for wastage and renewed as directed by the CGTA.
9. Contractor must high pressure wash the grids and inlet areas and grid holes must be mechanically reamed to their original diameter.
10. Contractor must clean all marine growth from all seabays (both forward and aft seabays), inlet piping and main seabay headers.
11. All grids must be prepared and coated as per HD-06 Hull Cleaning and Painting, coating must be applied to both sides. First Coat must be allowed to dry prior to grid being turned to apply coating to the opposite side. Grating holes must not be obstructed by coating applications upon completion of this specification item.

12. The grid securing tabs on the hull must be inspected by the contractor and chief engineer. Any broken tabs must be welded back into position. Contractor for the purpose of bidding should assume that 3 tabs will require welding repairs and include a cost in their overall bid, actual work carried out must be adjusted up or down (credit), through PSPC 1379 action. Contractor must provide a unit price to repair one tab, for adjustment purposes.



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. N/A

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

HD-08 PROPELLER HUBS, SHAFTING AND SHAFT SEAL/CLEARANCE

1: SCOPE:

The intent of this specification is to:

- A. Open Port and Starboard shaft seals for ABS survey/inspection
- B. Check and record wear down readings for Port and Starboard Stern tube bearings, intermediate bearings and aft spectacle frame bearings
- C. Remove Port and Starboard shafts for ABS inspection
- D. Inspect propeller blades and CPP equipment

2: TECHNICAL DESCRIPTION:

2.1 General

1. Propeller shaft seals

1. The Contractor must ensure that all applicable safety precautions including equipment lock outs and tag outs are implemented prior to the start of work.
2. The Contractor must ensure that, prior to the start of disassembly, precautions are taken to ensure the reassembly and reinstallation of all system and equipment will be as per original and in accordance with manufacturer's specification.
3. The Contractor must release the inboard side of the PORT and STBD shaft seals. The Contractor must protect the sealing surfaces of the shaft seals as described in the Simplan Seal Manual.
4. The Contractor must engage the services of a FSR from Simplex Americas LLC to dismantle the shaft seals, measure and record the required measurements and reassemble the shafts seals following the ABS survey. Contractor must include an allowance of \$20,000 to cover expenses of an Simplex Americas FSR and ALL parts required to complete this scope of work. The FSR must be reimbursed for any necessary parts, services, authorized travel and living expenses reasonably and properly incurred in the performance of the work. Final costs for the FSR as well as parts and materials must be adjusted up/down upon proof of invoices through PSPC 1379 action.
5. The Simplex FSR must re-install the PORT and STBD shaft seals after the necessary work in this specification has been completed. The FSR must record measurements and must tension the shaft seals in accordance with the Simplan Manual. The Contractor must include all costs related to the Simplex FSR in the bid proposal.

2. Propeller Shaft Clearances

1. The Contractor must measure and record the clearance reading between shaft and FWD Stern Tube Bearings while the shaft seal is dismantled. Bearing clearance readings must be taken at four places for both the PORT and STBD shafts as follows:

- Top (12 o'clock position);
- Bottom (6 o'clock);
- Port (9 o'clock position);
- Stbd (3 o'clock position).

2. The Contractor must open the Aft Stern Tube Bearing covers from PORT and STBD sides. Bearing Clearance readings must be measured and recorded in four places for both the PORT and STBD shafts as follows:

- Top (12 o'clock position);
- Bottom (6 o'clock);
- Port (9 o'clock position);
- Stbd (3 o'clock position).

3. The Contractor must reinstall the Aft Stern Tube Bearing covers on the PORT and STBD shaft lines after the readings have been measured and recorded. The Contractor must lock the screws in their original position using the original screw lock style.

4. The Contractor must remove the Rope Guards with Net Cutters from PORT and STBD sides of the AFT Bracket Bearing. Bearing clearance readings must be measured and recorded at four places for both the PORT and STBD shafts as follows:

- Top (12 o'clock position);
- Bottom (6 o'clock);
- Port (9 o'clock position);
- Stbd (3 o'clock position).

3. Propeller shaft removals and inspection

1. The Contractor must engage the services of a Kongsberg (formerly Rolls Royce) FSR to provide oversight of all work being performed on the shafting systems. Final system performances must be verified by the FSR and must be signed-off attesting that the systems have been serviced in accordance with Kongsberg requirements. The FSR must have a good working knowledge of the specific shafting systems installed on the CCGS C. Peddle.

Contractor must include an allowance of \$80,000 to cover expenses of a Kongsberg FSR, and ALL parts required to complete the scope of work. The FSR will be reimbursed for any necessary parts, services, authorized travel and living expenses reasonably and properly incurred in the performance of the work. This info must be included in the PSPC data pricing sheet. Final costs for the FSR as well as parts and materials must be adjusted up/down upon proof of invoices through PSPC 1379 action.

Contractor must include in their bid a 200 hour labour allowance. This labour allowance is to assist the FSR in completing their scope of work in the capacity of rigging, moving, mechanical disassembly, etc....

2. The Contractor must remove the propeller rope guards from the aft stern tube bosses on both sides. This includes the removal of the rope cutters.

3. The Contractor must label and mark the shaft grounding system fitted to the shafts. This system must be disconnected and removed from the shaft line. This includes the removal of the bushes and brush holders as space will be required for the removal of the shaft seal.

4. The Contractor must label and mark the shaft speed measuring system fitted to the shafts. The system must be disconnected and removed from the shaft line. This includes the proximity sensors for the speed signal. The Contractor must measure and record the distance between the proximity sensors to the electrical pic-ups and provide to the TA.

5. The Contractor must clean the shafts of all corrosion and all debris after the removal of items in point 2) and point 3) to facilitate the removal of the SKF Coupling.

6. The Contractor must follow the disassembly procedures provided in the SKF Installation manual for the removal of the shaft coupling. Care must be taken to ensure that all necessary measurements are recorded to ensure that the coupling is re-installed in the correct position and provided with the correct pressure upon re-installation.

7. The coupling must be slid aft to allow for the disconnection of the inner tube of the CPP system.

8. The Contractor must follow the disassembly procedure provided in the Rolls Royce Shaft Installation manual to disconnect the inner tubes of the CPP systems. Every effort must be made to recover the oil that will drain from the systems at this point. The oil must be disposed of ashore and disposal certificates must be presented to the TA proving that the oil was disposed of in accordance with Federal, Provincial and municipal regulations. Oil spilled into the bilges must be cleaned-up at the Contractor's expense.

9. The Contractors must remove the shafts aft and care must be taken to avoid damaging the intermediate and aft bearing surfaces as well as the propeller blades by providing sufficient support when the propeller shafts clear the individual bearing surfaces.

10. The Contractor must remove the SKF couplings and sling them out of the way once the shafts have been withdrawn the required distance to allow for the removal of the shaft couplings.

11. The Contractor must inspect the PORT and STBD stern tube bearings, the intermediate bearings and the AFT Bracket Bearings. All finding must be recorded and provided to the CGTA.

12. The Contractor must remove the aft seals between the aft liner and the propeller hub flange. This area must be inspected by a certified NDT Level II inspector using Magnetic Particle or Ultrasound inspection technique to determine if there are any surface cracks in propeller shaft flange area.

13. The Contractor must clean and inspect the PORT and STBD shafts for any defects. These must be noted and provided to the attending ABS surveyor and the CGTA. Shaft diameter measurements must be measured and recorded at the front and back of each bearing surface and the measurement must be taken in four places at each location. Measurements must be recorded and provided to the TA and IA.

14. The Contractor must inspect the liners of the propeller shafts for any anomalies and proper sealing at of the liners at all ends.

15. The contractor must remove both port and starboard P3 pumps to inspect both couplings on the port and stbd cpp hydraulic pump/motor set. The contractor must inspect the inside of the port and stbd main cpp tank as well as the port and starboard gravity tanks. Any parts found to be defective during the inspection will be covered under PSPC 1379 action.

16. The Contractor must provide the attending ABS surveyor the opportunity to witness the internals of propeller hubs and the removed blade of each shaft line. Where required by the FSR, the Contractor must take and record readings and provide these to the TA.

17. The contractor must perform an Arc test on both port and starboard shafts to determine the integrity of the existing Thor-coat shaft coating. The Contractor must inspect the Belzona 2141 transition sleeve coatings. Any coating repairs deemed necessary by the CGTA or ABS to the existing Thor-coat and Belzona 2141 on both shafts will be covered by PSPC 1379 action.

4. Propeller HUBs and Blade Removal

1. The Contractor must remove 4 blades from each propeller hub and its associated hardware for the inspection by the attending ABS surveyor. The propeller blades must be removed under the direction of the Kongsberg FSR. The Contractor must dispose of all oil that is drained from the propeller hubs in accordance with federal and provincial regulations.
2. The Contractor must reinstall the propeller blades of each propeller hub with a new O-ring and in accordance with the directions in the manual and the guidance of the FSR.
3. The Contractor must carry out NDT for all 8 (eight) propeller blades on Port and STBD propellers. Roots and flanges of all 8 blades and blade to boss securing arrangements must be inspected by a certified NDT Level II inspector using Dye Penetrant, Magnetic Particle or Ultrasound inspection technique to determine if there are any surface cracks. The Contractor must provide the attending ABS surveyor and TA the opportunity to witness the test to obtain credit.
4. The crew has reported that at zero pitch the vessel moves astern slightly. The FSR must investigate and adjust the control system to achieve roughly no thrust at zero pitch, as per design.

5. Propeller shaft installation

1. The Contractor must reinstall the shaft couplings on the shafts and then proceed to reconnect the shaft lines as per the installation manual, while exercising care to ensure that the shaft line bearings are not damaged during the insertion of the shafts back into the vessel.
2. The Contractor must protect the inner tube threaded ends of each shaft line from damage as they form part of the mechanical seal for the hydraulic system.
3. The Contractor must assemble the inner tubes and connect the shafts as per the installation instructions in the manual.

4. The Contractor must re-install the SKF coupling after the inner tubes of the shaft system have been reconnected and torqued. The Contractor must verify the position of the SKF coupling in relation to the measurements taken and recoded prior to the removal of the SKF coupling. Installation must be as per the supplied SKF Manual.

5. The Contractor must reinstall the shaft grounding systems as per the manual and must reconnect the system as per the documentation recorded prior to disassembly.

6. The Contractor must reinstall the speed measuring system and must ensure that all proximity sensors are adjusted to the correct distance from the shafting based on the recorded measurements prior to disassembly.

7. The Contractor must reinstall the aft propeller hub seals to the aft liners and once the propeller shafts are refitted into the vessel the Contractor must re-install the rope guards on each aft stern frame.

8. The Contractor must refill the CPP system with new Contractor supplied oil (Mobil gear 600 xp), approximately 170L is needed. The Contractor must follow the instructions in the installation manual ensuring that all air is bled from the system and must set to work the system, ensuring that system pressures are normal and that the propeller blades rotate in the ahead and astern directions as required.

9. Any deficiencies found during all inspections must be brought immediately to the attention of the CGTA for approval. Any approved repairs or replacements will be negotiated using form PSPC 1379, as applicable.

2.2 Location

Stern of 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

Kamewa CP-A D Installation Manual
Simplan seal technical drawing

6098-24300-01_2	Shaftline Alignment dwg 1-18	
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3.2 Standards and Regulations

1. N/A

3.3 Allowances

1. \$20,000 for Simplex America FSR
2. \$80,000 for Kongsberg (Rolls Royce) FSR

3.4 Owner Furnished Equipment

1. N/A

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. The Contractor must notify the CGTA upon completion of the work in this specification item and must afford the TA the opportunity to witness all completed work prior the undocking of the vessel.

4.2 Testing

1. The Contractor must develop a test and trials plan that will test all aspects of the propeller shafting systems. The test and trials plan will be a part of the test and inspection that is provided by the contractor in the Services section.
2. The Contractor must complete all work requirements as directed by the Rolls Royce FSR in order to validate the proper calibration, function and operational readiness of the CPP systems. Tests must include operational pressure tests in the dry dock to validate there are no leaks in the propeller hubs, the proper movement of the propeller blades, and that the correct pitch angles are displayed on the instrumentation. Sea trials must be conducted to test the CPP systems through their full range of adjustments for pitch and power transmission from the gearboxes to the controllable pitch propellers and that all pressures and temperatures are normal. Upon undocking all shafting systems worked on must be tested for fit and function.
3. The Contractor must complete all work requirements as directed by the Simplex Americas LLC FSR in order to validate the shaft seals water tightness during a dock trial where the ship's crew will rotate the propellers at a moderate speed, determined by the CGTA in agreement with the Contractor, with the objective of finding any water leaks and overheating.
4. The Contractor must complete a sea trial with 100% engine load for one hour to verify that all systems operate within the equipment manufacturer's standards.
5. The Contractor must afford the CGTA the opportunity to witness all tests and trials.

6. The Contractor must correct any defects, at no cost to Canada, that are a result of any work carried out by the Contractor.

4.3 Certification

1. N/A

5: DELIVERABLES:

5.1 Reports

1. The Contractor must prepare and submit a comprehensive report to the TA of all work done, all measurements taken and all "AS LEFT" measurements for the SKF Couplings, FSR work and findings, the shaft seals and shaft bearing clearances, shaft coatings, and cpp system components before the end of the contract **(ITP)**.

5.2 Spares

1. N/A

5.3 Training

1. N/A

HD-09 TANK INSPECTIONS

1: SCOPE:

The Contractor must open, clean and present the Sewage Sludge tank, the Black Water tank, the Dirty Oil & Sludge tank, Grey Water tank, the Bilge Water tank, Lube oil tank, Fuel oil tank #1, Fuel oil tank # 2, Fuel oil tank # 3, Fuel oil tank # 9 and the Fuel oil day tank for inspection by the attending ABS surveyor.

2: TECHNICAL DESCRIPTION:

1. The Contractor must stop and lock-out the ship's sanitary water system.
2. The Contractor must contain the contents of all the tanks mentioned in the scope and must dispose of these contents in accordance with all Federal, Provincial and Municipal regulations in effect. The Contractor must provide disposal certificates.
3. For bidding purposes, the Contractor must bid on the removal of 8000 liters of clean fuel from fuel oil tanks 1-3, 9 and the fuel oil day tank. The amount of removed fuel will be adjusted by using the PSPC 1379 process. The Contractor must dispose of the clean fuel according to provincial and federal regulations.
4. For bidding purposes, the Contractor must bid on the removal of 2000 liters of waste oil from the bilge water and dirty oil tanks. The amount of removed waste oil will be adjusted by using the PSPC 1379 process. The Contractor must dispose of the waste oil according to provincial and federal regulations.
5. For bidding purposes, the Contractor must bid on the removal of 2000 liters of sewage from the grey water tank, black water tank and sludge tank. The amount of removed sewage will be adjusted by using the PSPC 1379 process. The Contractor must dispose of the sewage according to provincial and federal regulations.
6. All tank transducers must be removed prior to opening and cleaning of all tanks, stored in a safe place for the duration of refit. The Contractor must reconnect all transducers after all testing is completed. Tank level indicators must be verified by the contractor and chief engineer to be working following this specification item.
7. The Contractor must remove the Dirty Oil & Sludge Tank (#15), Sewage sludge tank (#6), Black water tank (#7b), Grey water tank (#7a), Bilge water tank (#4), Fuel oil tank #1, Fuel oil tank # 2, Fuel oil tank # 3, Fuel oil tank # 9 docking plug drain the tank and dispose of the oil and sludge remaining in the tank.
8. The Contractor must open the manhole to the Dirty Oil & Sludge tank (#15), pump dry, clean, ventilate the tank and certify it safe for entry to access the Sewage Sludge tank (#6) for the duration of the work inside these tanks.

9. The Contractor must open the manhole cover to the Sewage Sludge Tank, pump dry, clean, ventilate the tank and certify it safe for entry for the duration of the work inside.
10. The Contractor must open the manhole cover of the Lube Oil Tank, FO tank #1, FO tank #2 FO tank #3 FO tank #9 and the day tank, ventilate, wipe clean the tank and certify it safe for entry for the duration of the work inside.
11. The Contractor must clean all tanks, mentioned above EXCEPT the lube oil tank and all fuel oil tanks with a pressure wash system of at least 5000 psi.
12. All ten (10) tanks must be inspected by the ABS surveyor and C/E for structural damage and the quality of each tank's coating system (no coating in the fuel tanks).
13. The Contractor must pneumatically pressure test all ten (10) tanks to a head of 2.44 meters above the crown of the tank for duration of 1 hour. This pressure test must be witnessed by the ABS surveyor with TA (or delegate) being able to witness the test (ITP).
14. The Contractor must remove the suction pipes for all tanks **except** Lube oil and the Fuel oil tanks. Each pipe is connected to a flange. The pipes must be cleaned, inside and out, with a water pressure system with at least 5000 psi. The Contractor must inspect these pipes for corrosion and advise the TA of any defects. Any approved repairs or replacements will be negotiated using PSPC 1379 process, as applicable.
15. The Contractor must reinstall all suction pipes with new Garlock style gaskets.
16. Once all work inside the tanks is complete the Contractor must reinstall the five docking plugs and must reinstall the manhole covers using new Contractor supplied manhole gaskets, nuts and washers. All replacement materials must be of the Stainless Steel. Any structural repairs required to any tanks will be handled via PSPC 1379 action.

17. Sewage Sludge tank, Black water tank Grey water tank recoating

There is a pipe that connects the grey water and black water tank, sealed by a steel plate, gasket and fasteners. This connection was disturbed last docking, essentially making both the black and grey water tanks, one single tank. This connection must to be restored by the contractor with contractor supplied gaskets and fasteners following all tank work.

Contractor will note that the black and grey water tanks are not large and are difficult to access. The Contractor has a \$5000 allowance for materials and labour to gain access to these tanks and complete the scope of work in this specification item. The Contractor must provide a plan to the CGTA on refit start date describing how access will be attained. All interference items removed to gain access to these tanks must be protected and reinstalled to their original function.

The coating system on the Black water, Sewage sludge tank and the Grey water tanks is heavily worn/deteriorated and must be reapplied. Contractor must apply the following preparation and coating scheme provided by International Paints. Tank testing for these three tanks must take place after all coating work is completed. For the purpose of bidding assume the combined internal surface area of all three tanks is approximately 20 square meters. The actual coating applied will be adjusted by 1379 action.

Surface Preparation:

NACE No. 2/SSPC-SP10 – Near white metal blast with a sharp angular profile of 2-4 mils.

Coating Scheme:

Coat:	Product:	Colour:	DFT:
Full	Interline 624 Primer	Buff	6 mils
Stripe	Interline 624 Topcoat	Grey/White	N/A
Full	Interline 624 Topcoat	Grey/White	10 mils

2.2 Location

1. Main machinery room below deck plates

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

Drawing number	Description	Electronic File
AF6098-89940-02	Tank Arrangement, Capacity Plan	
TDP	MSPV International Coatings Maintenance Plan OBM	

3.2 Standards and Regulations

1. The following Coast Guard Standards and or Technical Bulletins must 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

See technical description

3.4 Owner Furnished Equipment

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

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. The Contractor must advise the ABS surveyor and the CGTA when the tanks and their coating systems are ready for inspection and survey credit must be obtained for the tanks. Final inspection of all tanks to be carried out jointly by The Contractor and CGTA.

4.2 Testing

1. The Contractor must pneumatically pressure test all ten (10) tanks to a head of 2.44 meters above the crown of the tank for duration of 1 hour. This pressure test must be witnessed by the ABS surveyor with TA being able to witness the test.
2. The Contractor must provide a final vacuum test on each of the docking plugs if they are removed for the draining of the respective tanks. This vacuum test must be witnessed by the TA.
3. The Contractor must correct any defects, at no cost to Canada, that are a result of any work carried out by the Contractor.

4.3 Certification

1. Contractor must provide all test certificates, and endorsement of safe operation required by the ABS for certification to the CGTA.

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. The Contractor must provide the TA with a copy of all gas free and entry certificates for the tanks.
2. The Contractor must provide the TA with a copy of all disposal certificates for the waste quantities removed from the 10 tanks.
3. The Contractor must provide the TA with an electronic report of the condition of the tanks, their coating systems and where the coating systems have been touched up, the details of the substrate temperature the wet and dry bulb temperatures before, during and after coating system application and the relative humidity, and pressure testing results (including repairs if done) **(ITP)**.

5.2 Spares

1. N/A

5.3 Training

1. N/A

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 must 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 must subcontract the annual inspection and recertification of Life rafts to an ABS approved service provider that meets Original Equipment Manufacturer (OEM) certification.
3. An allowance of \$5,000 must be provided for work completed by the sub-contractor. This allowance must be adjusted up or down through PSPC 1379 action upon proof of invoices.
4. Contractor is responsible for ensuring Life rafts are witnessed by the ABS surveyor as required and for providing certificates to CGTA for the life rafts.
5. Contractor must return Life rafts and their hydrostatic releases to the stowed position on the vessel.

2.2 Location

1. Main deck Aft/forward

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 must 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. \$5000 for ABS approved subcontractor to perform the inspection services.

3.4 Owner Furnished Equipment

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

4: PROOF OF PERFORMANCE:

4.1 Inspection

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

4.2 Testing

1. N/A

4.3 Certification

1. Contractor must provide all test certificates, and endorsement of safe operation required by the ABS for certification to the CGTA.

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. Contractor must 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

H-02 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 must 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 ABS, and approved by the System Manufacturer.
2. Cylinders must be individually weighed. All weights, levels, and pressures of cylinders must be measured and recorded.
3. All rotating beacons and flashing lights must be tested and proven in good working order.
4. All audible alarms must be tested and proven in good working order.
5. All wires and cables must be proven in good working order.
6. The FM-200 Nitrogen Driver must be proven in good working order.
7. All piping and nozzles must be proven clear.
8. Any required repairs identified as a result of the inspections must be brought to the attention of CGTA before commencing any repair work. All repairs must be negotiated through PSPC 1379 action.
9. All cylinders must 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.

3: REFERENCES:

3.1 Guidance Drawings/Nameplate Data

1. AF-6098-55500-04 Fire control plan

3.2 Standards and Regulations

1. The following Coast Guard Standards and or Technical Bulletins must 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 must 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 must be CFM.

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. Contractor must arrange all necessary ABS inspections related to the firefighting and fire detection system inspections.

4.2 Testing

1. Systems must be inspected to the satisfaction of the ABS surveyor and OEM

4.3 Certification

1. One electronic copy of all inspection reports and certifications must be provided to CGTA and to the ship's management.

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. A record of all cylinder weights and levels, both before and after servicing, must be provided in the final report **(ITP)**.

2. A list (or drawing) of all audible alarms, rotating beacons, and wiring checked must be provided in the final report. Any repairs completed must be listed.

5.2 Spares

1. N/A

5.3 Training

1. N/A

H-03 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 must arrange to have the ship's Notifier AFP-200 fire detection and alarm system inspected, tested and certified by a service agency certified by ABS and approved by the System Manufacturer.
2. All components of fire detection system must 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 must be brought to attention of CGTA as early as possible. Repair work must be approved by CGTA, and negotiated through PSPC 1379 action.
4. One electronic copy of all inspection and test certificates must be provided to CGTA and the ship's management.
5. All work must be completed to satisfaction of CGTA and the ABS 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. AF-6098-55500-04 Fire control plan

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 must 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 must be credited by ABS
2. Inspection and test certificates from Service Agent upon completion of this specification.

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. One electronic copy of inspection reports must be provided to CGTA and ship's management **(ITP)**.
2. A list of all defects and replacements must be provided to CGTA.

5.2 Spares

1. N/A

5.3 Training

1. N/A

H-04 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.

2: TECHNICAL DESCRIPTION:

2.1 General

1. Contractor must arrange to have all the vessel's portable fire extinguishers inspected, tagged and dated by a locally authorised service agency. A comprehensive list of extinguishers and their type/location with S/N will be supplied in the TDP
2. Extinguishers must be dealt with so that no space will be left without a portable fire extinguisher at any one time. NOTE: Contractor must provide temporary equivalent units for use if any extinguishers are required to be removed from the ship for servicing.
3. Any cost of transporting the extinguishers from vessel to the place of inspection, and including the return of the extinguishers to the vessel, must be included in the overall bid.
4. The following fire extinguisher must be hydro tested:
- 15 lb CO₂, location: Main Machinery Room Aft Centre
5. The following 3 fire extinguishers must have a 6 year inspection completed:
 - 5 lb dry chem, location: FRC
 - 5 lb. dry chem, location: FRC
 - 4 lb. dry chem, location: Shepherd Boat
6. Any required repairs identified as a result of the inspections must be negotiated through PSPC 1379 action.
7. Extinguishers must 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. AF-6098-55500-04 Fire control plan

3.2 Standards and Regulations

1. The following Coast Guard Standards and or Technical Bulletins must 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 must 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 must be CFM.

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. Contractor must update each extinguisher's inspection ID

4.2 Testing

1. N/A

4.3 Certification

1. N/A.

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

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

5.2 Spares

1. N/A

5.3 Training

1. N/A

H-05 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 must clean dryer ducting from the laundry room.

2: TECHNICAL DESCRIPTION:

2.1 General

1. Contractor must provide the services of a qualified HVAC representative to mechanically clean the vessel's ducting. All ducting noted above must 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 must not be used to seal up access point. Contractor must co-ordinate the cleaning with the ship's staff in order to minimize interruption of normal work routines.
2. Contractor must remove ceiling panels in order to access the applicable ventilation trunking, ducting, and tubes. All items must 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 must be reinstalled in good order in its original location and condition. All insulation removed must be reinstalled accordingly and all taped seams must be re-taped with new approved tape (foil-grip) for HVAC systems (duct tape must not be used).
3. Prior to commencing any work, Contractor must tag and lock out each system supply/exhaust fan set. All electrical and mechanical lockouts and tag outs must be carried out to the satisfaction of the CGTA, as per the DFO/5737 Fleet Safety Manual, 7.B.5 - LOCKOUT AND TAGOUT. Contractor must 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 must supply and install their own locking devices and retain all keys during the scope of this work. Upon completion of all work the CGTA must 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 must 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.
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 must 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 must be chemically and/or steam cleaned. All dirt, grease, debris, and cleaning fluids must be trapped and must be removed ashore and disposed of by Contractor.
9. Prior to cleaning, all mechanical and electrical connections to range hood must 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 must be temporarily relocated and protected.
10. The range hood filter screens must be removed and steam cleaned.
11. Trunking in way of the exhaust fan must be opened to allow complete degreasing of fan, fan motor, and its support brackets. Approximately 2m of 25cm by 20cm trunking is involved. Contractor must remove sections of the stainless steel cladding for access.
12. Trunking and range hood must 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 must 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) must be accessed, opened and cleaned of dust and debris.

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 must 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 AF6098-51000-01

3.2 Standards and Regulations

1. The following Coast Guard Standards and or Technical Bulletins must 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

3.4 Owner Furnished Equipment

1. Contractor must 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 must 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 must be conducted in the presence of the CGTA to prove the system is operating as per its original condition. All work must 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, one (1) electronic copy of the service report must be provided to CGTA and Ship's management (**ITP**).

5.2 Spares

1. N/A

5.3 Training

1. N/A

H-06 ANNUAL LIFEBOAT DAVIT INSPECTION

1: SCOPE:

The intent of this specification item is for Contractor to complete the survey of the Welin Lambie Life Boat Davit, for the ABS annual inspection and testing.

2: TECHNICAL DESCRIPTION

1.1 General

1. Contractor must obtain the services of a ABS approved Field Service Representative (FSR). Contractor must provide all equipment, hardware, personnel, etc. to carry out the required work under the direction and guidance of the FSR. All scheduled maintenance as described in the Welin Lambie Lifeboat davit manual must be followed and completed, this manual will be provided in the TDP and outlines all tasks.
2. Contractor must include an allowance of \$30,000 to cover expenses of an ABS approved FSR. The FSR must be reimbursed for any necessary parts, services, authorized travel and living expenses reasonably and properly incurred in the performance of the work. Contractor must provide the fee schedule from for the services of the FSR. This info must be included in the PSPC data pricing sheet. Final costs for the FSR as well as parts and materials must be adjusted up/down upon proof of invoices through PSPC 1379 action.
3. All manufacturer's procedures and recommendations must be followed during the scope of work with technical specifications being adhered to as a minimum by Contractor. Contractor must arrange for scheduling the on-site presence of a ABS surveyor as required for inspections/testing during the course of this work.
4. Contractor must supply all the necessary staging and crantage 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 must be trained in fall restraint and all fall restraint equipment must be certified and current.
5. Contractor must supply certified weights for the load test as instructed by the FSR. Contractor must 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 must be included in the overall bid.

6. Prior to the commencement of any and all work, Contractor must 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 must be carried out to the satisfaction of the CGTA, as per the DFO/5737 Fleet Safety Manual, 7.B.5 - LOCKOUT AND TAGOUT Contractor must 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 must supply and install their own locking devices and retain all keys during the scope of this work. Upon completion of all work the CGTA must be in attendance when all locks/tags are removed.
7. The release hooks in the Lifeboat must be disassembled for inspection. All locks, diaphragms, bushings, hooks, side plates, and releases must be proven for the ABS inspection.
8. On completion of work, survey, and re-assembly, the davit assembly must 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 must then be 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 must be conducted. An ABS surveyor or delegate must be present for all load / functional tests. All limit switches must be proven functional. All weights must be removed from the Lifeboat. Lifeboat must be fully cleaned of any debris, dirt, or water and be stowed in its' davit.
9. Contractor must supply an electronic report upon completion of the work, from the FSR prior to finishing the refit. The report must at a minimum list all work undertaken, repairs, parts used, measurements, readings, etc.

2.2 Location

1. Midship starboard side bridge deck.

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 Rescue Boat Davit

3.2 Standards:

1. The following Coast Guard Standards and or Technical Bulletins must 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. \$30,000 for a Welin Lambie FSR

3.4 Owner Furnished Equipment

1. The contractor must supply all materials, equipment and parts required to perform the specified work.

4: PROOF OF PREFORMANCE:

1. An electronic report documenting all findings, defects, and parts replaced during the inspection.
2. Demonstrate operation to satisfaction of CGTA, FSR and the ABS surveyor.

PART 5: DELIVERABLES:

5.1 Drawings / Reports

1. Electronic report detailing all inspection work and findings upon completion of all work from the FSR (**ITP**).
2. Safety Management System forms and checklists
3. ABS Survey credit.

5.2 Spares

1. N/A

5.3 Training

1. N/A

5.4 Manuals

1. N/A

CONTACTS

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H-07 ALLIED CRANE 5 YEAR INSPECTION

1: SCOPE:

The intent of this specification item is for Contractor to complete the 5 year inspection routine on the ALLIED Crane

2: TECHNICAL DESCRIPTION

General

1. Contractor has a \$40,000 allowance for a qualified Allied FSR to Complete the 5 year inspection routine, TB10-23 Marine Crane technical manual will be supplied in the TDP, which contains the inspection routine and the details to do each job. All crange and scaffolding required by the FSR to complete ALL work will be covered under the allowance.
2. Contractor must complete all inspection items on the 5 year routine for the Allied Crane as described in the ALLIED CRANE manual. An Inspection checklist has been provided in the TDP. The ALLIED crane technical Manual will be provided in PDF for the particulars of each job as a part of the TDP for this specification item.
3. All materials/equipment required to carry the inspection out must be contractor supplied, including all oils (list of oils is right on top the maintenance inspection routine in the TB10-23 Marine Crane technical manual provided in the TDP).
4. Contractor must remove and dispose of any remaining oil in accordance with all Federal, Provincial and Municipal regulations. Disposal certificates must be provided to the CGTA. All oils required to complete the inspection and replenish oil levels (outlined in the Allied Crane manual's inspection matrix) from fluids removed during the inspection will be supplied by the CCG.
5. Prior to final load testing, using calibrated weights or a dynamometer contractor to calibrate the Omega weight display. Procedure for this calibration, as provided by Allied Crane is aboard the vessel. Contractor must provide a load test certificate

2.2 Location

- 1.Center of open after main deck

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/Name plate data

1. Allied systems marine crane model TB10-23 Technical Manual edition 80-992 dated Dec 2011
2. Guidance documents for Omega display calibration

3.2 Standards:

1. Canadian Coast Fleet Safety Manual (DFO 5737)
2. Coast Guard ISM Lock Out/Tag Out Procedures
3. Canada Shipping Act 2001 - Machinery Inspection Regulations
4. ABS recommendations for Man lift devices.

3.3 Allowances

1. \$40,000 to perform the 5 year inspection and replace the dampening motors.

3.4 Owner Furnished Equipment

1. All oils and materials necessary to complete the inspection will be supplied as CFM

4: PROOF OF PREFORMANCE:

4.1 Inspection

1. Load display unit to accurately reflect loads applied to cranes hook.

4.2 Testing

1. Contractor must conduct a load test to the standard of ABS/CCG regulations for the ALLIED crane.

4.3 Certification

1. Contractor must submit a load test certificate signed by an professional engineer to the Captain/chief officer. SWL x1.25 **(ITP)**
2. Contractor must submit a report detailing inspection work including findings, pictures, defects and parts used .

PART 5: DELIVERABLES:

5.1 Drawings / Reports

1. The Contractor must provide to the CGTA **(ITP)** :
 - Copies of readings taken and crane condition report in electronic format as well as two typewritten copies.
 - Updated reports for any circuits and/or deficiencies corrected with 1379 action.
 - Copy of the survey credit for the inspection of the crane.
 - Report detailing inspection items.

2. The Contractor must provide to the ABS surveyor:
 - Copy of the readings taken and crane Condition Report to obtain Survey Credit.

5.2 Spares

1. N/A

5.3 Training

1. N/A

5.4 Manuals

1. N/A

H-08 FRESH WATER TANK CLEANING AND INSPECTION

1. TECHNICAL DESCRIPTION:

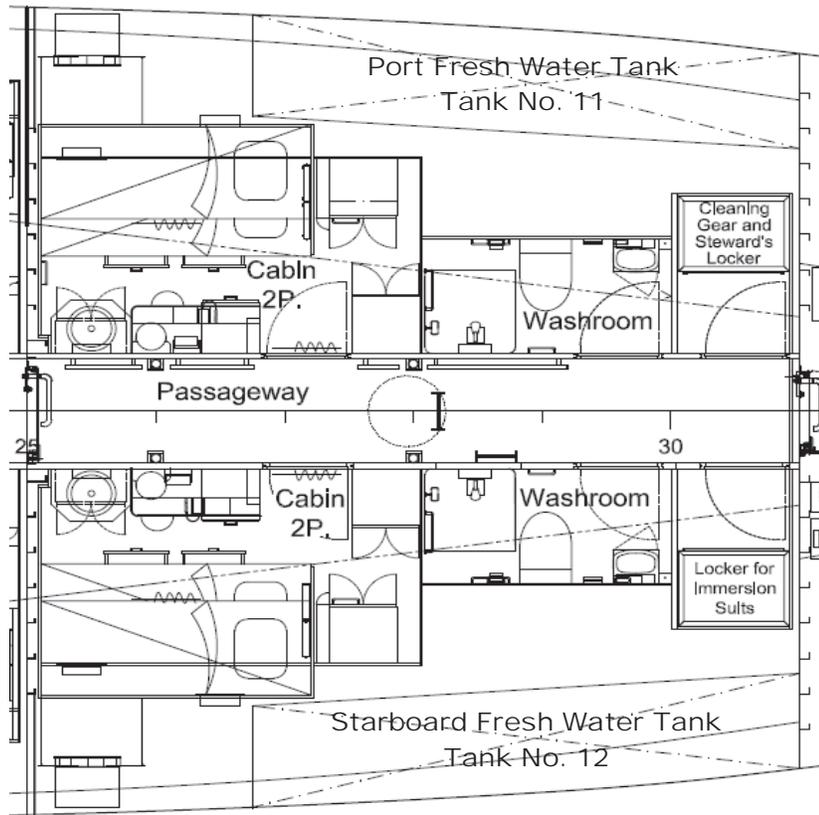
General

1. The intent of this specification item is to open the fresh water tanks, clean, inspect and touch up the coating.

Table H-7.1 Fresh Water Tanks

ID	Tank Name	Location	Volume	Manhole Location
Tank 11	FW Tank Port	Fr 26.75-31	3.205 cu M	Behind Port Shower Stall Access – Two manhole covers
Tank 12	FW Tank Stbd	Fr 26.75-31	3.205 cu M	Behind Stbd Shower Stall Access – Two manhole covers

Contractor must drain the tanks of water. The manhole covers must be removed from each tank by Contractor. Contractor must provide each tank with a mechanical ventilation/extraction system, vented to the outside of the ship. Good ventilation must be provided and any blowers/extractors must ensure good air movement and solvent vapour removal from the lowest point in the tanks. Vapours, dust, dirt, etc. must not be allowed to enter the Accommodation space of the ship and must be directed by flexible ducting to the outside of the vessel.



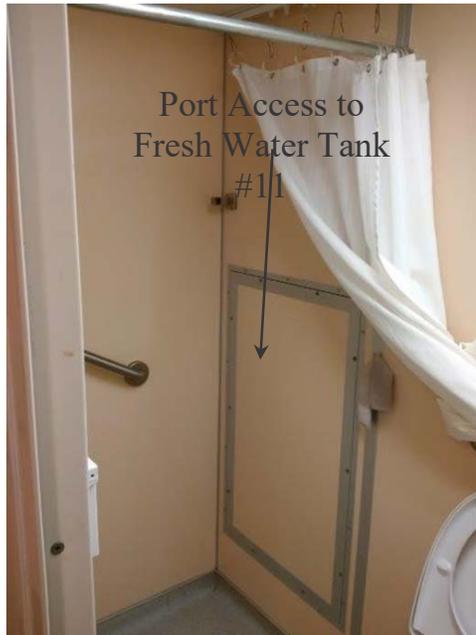
Bow Thruster Compartment



Access location to tanks – Port and Starboard Washrooms



Starboard Access to
Fresh Water Tank #12



Port Access to
Fresh Water Tank
#11

The void space in the fresh water tank areas – hull plate, tanks and framing are insulated – be careful on entry

Contractor must allow for 3m² of repairs to insulation – remove old damaged, supply and install new.

Foil back / yellow soft insulation – bid on 2 inch thick. Contractor must submit a unit cost for insulation repair so that adjustments can be made via PSPC 1379 action.

2. Tanks must be certified safe for personnel to enter prior to any work being carried out internally. 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 certificates. A copy of a gas free certificate must be given to the CGTA prior to personnel entering the tank and a copy of each certificate must be posted in a conspicuous location in close proximity to the manhole cover for each tank. Spaces must be tested each day that personnel are required entry in the tanks. Contractor must take note of the DFO/5737 Fleet Safety Manual, 7.B.3 - ENTRY INTO CONFINED SPACES.

3. Contractor must open both tanks and remove any remaining water from the tanks. The amount is estimated to be approximately 20 L per tank.

4. Approximate surface area of the tanks;

44 square meters for Starboard

44 square meters for Port

5. The internals of each tank must be hydro-blast clean (2500 psi maximum). Contractor must protect each tank sounding transducer and temperature transducer prior to commencing work and for the duration of all work in the tanks.

6. Contractor must take precautions to ensure that no damage, unnecessary cleaning, or repairs must occur from hydro blasting and/or the application of coatings. Contractor must ensure that every internal tank opening, where paint chips and debris from hydro blasting can gain entry, is suitably covered. Measures must be taken to ensure that surfaces and equipment other than those specified are not coated and that any inlets or discharges will not be blocked by the coating or grit.

7. Any rust areas and/or bare areas in the tanks must be power tool buffed with a hand wire wheel to remove rust and bring areas to clean metal surfaces. The bare areas must be buffed to SSPC-SP-3 standards. Contractor must be responsible for disposing of all removed paintwork, scale, dirt, etc. in an environmentally safe manner and must demonstrate compliance to the CGTA.

8. Upon completion of hydro blasting and the removal of all debris, both tanks must be thoroughly wipe down using lint free material or air swept to remove all visible signs of moisture on all surfaces. Contractor must supply industrial dehumidification equipment to remove all moisture from each tank to a humidity level as required by the coating manufacturer for the application of their product. Contractor must demonstrate that these conditions are met to the CGTA prior to the application of each coat. Contractor must ensure that each coating application is thoroughly dry before any further applications take place. Contractor must be responsible for landing this equipment on board and the subsequent removal including

all personnel, hardware, lifting equipment, etc. Contractor must also be responsible for monitoring this equipment as required.

9. Upon completion of **hydro** blasting all residue and debris must be cleaned and removed from the tanks. Upon completion of all cleaning, the CGTA and attending ABS surveyor and local accredited Health Inspection Representative must thoroughly inspect the tank internals.

10. Contractor is responsible for arranging and co-ordination the ABS surveyor and Health Inspection Representative for all required inspections identified in this specification item.

11. All distributed areas must be coated with 1 coat of Royal Coatings Easy-prime and **1 or 2** coats of Royal Coatings Easy Flex (**as per manufacturers recommendation**). The **3** coats must be applied to yield 5 mils DFT per coat, with a suitable drying time provided for between coats. Contractor will supply and maintain heating equipment to obtain a tank surface temperature of 18 to 20 degrees Celsius on steel. Steel must be coated during periods of drying and curing. The tanks must be allowed to cure as per the manufacturers recommendations under these conditions prior to being filled. When coating is thoroughly cured, tank must be inspected by CGTA and local accredited health inspector. Coating adhesion and condition must be acceptable to the CGTA and local accredited health inspector. For bid purposes, Contractor must bid on repairing 5 square meters and provide a unit cost for repairing 1 square meter for adjustment purposes through PSPC 1379 action.

12. Upon completion of the above work and to the satisfaction of the Chief Engineer and accredited health inspection representative, tanks must be wiped clean. Sounding pipes, suction pipes and vents must be proven clear prior to filling the tanks with water. All debris must be removed ashore and each tank closed up in good order. The Chief Engineer must examine each tank prior to final closing. Manhole covers must be replaced using new CFM 1/4 inch neoprene gaskets.

13. Upon completion of all work each tank must be filled with fresh water (contractor supply). Each vent must be removed and each tank must be filled to overflowing for a hydrostatic test on each tank to the satisfaction of the ABS surveyor. Vents must be installed with new contractor supplied gaskets upon completion of all work.

14. Contractor must supply and add 12% chlorine to each tank and test to ensure a minimum level of 50 mg/l free chlorine. The solution must be circulated by ship's personnel and then let set for 24 hours.

15. The super-chlorinated water must then be run through various potable water piping systems on board the vessel for at least one hour. Testing must be carried out to ensure that the super-chlorinated solution is flowing through each tap. Contractor must test various locations to prove this.

16. Upon completion of super-chlorinated, the tank solutions must be neutralised in each tank using CFM 35% hydrogen peroxide. The contents of the tank water must be tested to determine that the chlorine has been neutralised. Once this has been achieved Contractor must remove and dispose of the water. Contractor must submit a type written report to the Chief Officer showing the results of the various tests during the super-chlorinated /de-chlorination process.

17. Upon completion of all testing, the contractor must fill the tanks with potable water. Contractor must dose and test the tank contents until a free chlorine maintenance level of 0.2-0.5 mg/l of free chlorine has been attained.

2.2 Location

1. Below main deck port and stbd washrooms (hatch cover), BT compartment

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. DFO/5737 Fleet Safety Manual, 7.B.3 - ENTRY INTO CONFINED SPACES.

3.3 Allowances

1. N/A

3.4 Owner Furnished Equipment

1. N/A

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. CG will arrange a 3rd party NACE surveyor (level 2) to oversee coating application of this specification item.

4.2 Testing

1. Technical description covers testing

4.3 Certification

1. Contractor must obtain test certificates from the Provincial Regulator that certifies that the water in the tanks as "fit to drink". These certificates must be passed on to the CGTA.
2. Contractor must obtain test certificates from an independent lab that certifies the water in the tanks meets FSM standards. These certificates must be passed on to the CGTA.

3. Contractor must obtain NACE (level 2) report from the NACE surveyor on the fresh water tank coating application. This report must be given to the CGTA

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

1. Contractor must deliver coating application report to CGTA.

5.2 Spares

1. N/A

5.3 Training

1. N/A

H-09 PORT AND STARBOARD GEARBOX INSPECTIONS

1: SCOPE:

The intent of this specification is to complete port and starboard main engine gearbox inspection.

2: TECHNICAL DESCRIPTION

2.1 General

1. Contractor must obtain the services of a qualified Lufkin Field Service Representative (FSR) to complete the port and starboard gearbox inspection.

Suggested FSR Contact Information:

Brad Bracewell
Cullen Diesel Power
Branch Manager, Vancouver Island
p 250 758 5241
c 250 713 6705



2. Contractor must include, in their bid price, an allowance of \$40,000.00 for parts and services of an attending FSR. The cost must be included in the PSPC data pricing sheet as separate line item. FSR will be reimbursed for the authorized travel and living expenses reasonably and properly incurred in the performance of their work. The allowance must form part of the overall bid and will be adjusted through PSPC 1379 action upon proof of final invoice.

3. Contractor must supply all the necessary staging and crange, and oils as required to work on, remove, transport, and install the various components during this scope of work. Any crange or scaffolding required by the FSR will be covered as a part of the FSR allowance.

4. After the work is completed and upon undocking, an FSR must standby with the engine room crew to assist in any trouble shooting required to get the engine running or to deal with any issues that may arise. The FSR will accompany the vessel and crew on the sea trial and assist as necessary.

5. The following is a complete list of items the FSR must complete during the inspection. The guidelines for all of these jobs are contained within the Lufkin gearbox manual, which will be included in the TDP:

- Isolate/lock-out the gearboxes.
- Remove coupling and shaft guards.
- Inspect Geislinger input coupling and output couplings.
- Check coupling bolt shanks for steps and bolt holes for distortion or signs of overload.

- Check the foundation bolts for corrosion and confirm they are tight.
- Inspect the overall external condition of the marine gears and oil level.
- Inspect all flexible hoses and connections.
- Inspect all steel tube lines and connections.
- Inspect all electrical connections.
- Inspect and measure the wear on input and output labyrinth seal.
- Remove inspection cover (and reinstall upon completion of inspection).
- Visually inspect all the gear teeth that are visible and document wear/damage.
- Perform soft blue contact of gear teeth and record any abnormal wear or contact pattern.
- Inspect clutch plates.
- Check internal cleanliness of gear case.
- Verify proper function of all instrumentation
- Reconnect the couplings and shaft guards removed.
- Following inspection's, ensure the gearboxes are reassembled and ready for start- up and testing.
- Assist with the start-up and testing of the gearbox.

6. Any defects discovered during the inspection requiring repairs will be addressed through PSpC 1379 action.

7. Port and starboard gearbox oil coolers: Each gearbox has a shell and tube type gear oil cooler (cooled by sea water). The Contractor must isolate the gear oil/sea water (4 valves total, seek the C/E for guidance isolating). The Contractor must mechanically disconnect each cooler and chemical wash the cooler. All fasteners/washers and gaskets must be supplied and renewed on each cooler by the Contractor. The Contractor must pressure test to working pressure both the sea water and the oil side of the cooler. Nameplate data for the coolers is included in the TDP for reference. All inlet and outlet connections must be renewed upon re-install by the Contractor.

2.2 Location

1. Main Machinery Room (MMR), Aft

2.3 Interference

1. Contractor is responsible for the identification of any interference items, their temporary removal as approved by the CGTA, and storage and refitting to the vessel.
2. Contractor is responsible for protecting surrounding area and equipment while carrying out this work.

3: REFERENCES:

- 3.1 Guidance drawings/Name plate data
1. Lufkin gearbox technical manual

3.2 Standards

1. Canadian Coast Fleet Safety Manual (DFO 5737)
2. Coast Guard ISM Lock Out/Tag Out Procedures
3. Canada Shipping Act 2001 - Machinery Inspection Regulations

3.3 Allowances

1. \$40,000 for FSR parts and services

3.4 Owner Furnished Equipment

1. N/A

4: PROOF OF PREFORMANCE:

4.1 Inspection

1. N/A

4.2 Testing

1. Contractor to perform a dock side trial and sea trial upon completion of all work in the presence of the FSR.
2. Acceptance is based on a successful test and all equipment operating as per the manufacturer's requirements.
3. All work must be to the satisfaction of the FSR and CGTA.

4.3 Certification

1. N/A

5: DELIVERABLES:

5.1 Drawings / Reports

1. Contractor to provide one electronic copy of an inspection report that details with pictures all the work completed, readings taken and defects found. Dock side trial must be complete in the presence of the FSR (ITP).

5.2 Spares

1. N/A

5.3 Training

1. N/A

5.4 Manuals

1. N/A

H-10 WET EXHAUST PIPING AND TRANSOM RENEWAL

1: SCOPE:

The intent of this specification item is for the Contractor to fabricate two new exhaust inserts, remove the existing aft most section of the main engine exhaust (existing inserts), and install the new inserts.

2: TECHNICAL DESCRIPTION

1. Contractor must complete this specification item as per the specification prepared by Lengkeek Vessel Engineering (LVE), included in the technical drawing package, "Specification for new Hero Class exhaust outlet" and include the cost in their overall bid.
2. Contractor must unbolt the existing transom connections and cut out the transom insert in preparation for the newly fabricated exhaust system. Contractor must perform all removals with respect to the installations identified the specification by LVE, all removals must allow for the installation of the newly fabricated pieces, but not over compensate to a point where there will be a requirement for additional work. Contractor must adhere to the specification for the new transom exhaust system as outlined in the technical drawing package.
3. Contractor must identify and record the weight of all existing materials removed from ship (only materials not being reinstalled on the vessel) and record the weight of all new materials fitted to the ship (Government and Contractor supplied materials). Contractor must tabulate and provide one electronic copy in PDF format to the CGTA upon completion of work. Contractor to provide proof that the scale being used to determine the weights is calibrated and certified for the period of use.
4. All materials for both Port and Starboard inserts must be supplied by the contractor. Both port and starboard inserts must be fabricated as per the supplied drawings in the technical drawing package. To assist the Contractor in procuring the materials required for the inserts, a document in the drawing package titled "Wet exhaust parts" has the complete list of all insert parts required.
5. Hot work shall not commence until all areas in the vicinity of the hot work have been certified gas free and safe for hot work. Contractor shall obtain and arrange for the services of a certified Marine Chemist prior to the commencement of any hot work to determine by testing/inspection and proof of certificate that the area is safe for hot work. A copy of the hot work certificate shall be given to the CGTA and a copy posted in a conspicuous location adjacent to the hot work area. All precautions shall be taken to protect all areas and personnel from hot work damage. Contractor is responsible for maintaining a 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
6. Remaining exhaust piping must be suitably supported prior to and during removal of the aft section. The temporary supports will remain until the completion of this scope of work and removed by Contractor. All original and new exhaust supports must be connected upon completion of this scope of work. All openings to be covered and protected from damage and to prevent any debris from entering the pipework. Covering to be removed upon completion of work.
7. Corroded weld areas surrounding the existing hull exhaust penetration piece and corroded transom plating outside of the weld area must be cut-out as per this specification. Contractor must perform NDT (non-destructive testing) utilizing UT thickness measurements in way of the new exhaust openings prior to any removals. Contractor must tabulate the UT readings and consult with the CGTA

in order to determine if additional plating needs to be cropped out. Contractor must not damage the remaining transom plating during the removals, remaining plating to be in its original as found condition.

8. Contractor must notify the CGTA If the corroded area of transom plating will exceed the area identified for the new penetration plating prior to removal. Upon approval of the CGTA, Contractor must crop out the affected area and install a new insert plate as per original as fitted thickness and grade, in accordance with Lloyd's Register requirements. For bidding purposes Contractor to quote the supply and install of 2 m² of 6 mil ABS grade A steel in their overall bid. Contractor to provide a cost per m² for adjustment purposes through PSPC 1379 action, cost not to be included in overall bid.
9. Contractor to remove the existing insulation around the exhaust piping prior to start of work. Contractor must supply and install new insulation of equivalent rating and fit as existing to all new exhaust piping and secured as per original configuration. Final result will be entire exhaust piping system covered and protected with insulation. Lagging and pipe insulation information is given in the reference documentation.
10. Contractor must repair all coating damaged caused during the removal and installation of the new exhaust work to the satisfaction of the CGTA. Coating repairs to be completed as outlined in this specification utilizing a system compatible with the vessel's existing painting scheme and manufacturer's recommendations.
11. Temporary attachments to the vessels exterior are not allowed. Contractor to consult with the CGTA if attachments become necessary due to the scope of work, final approval must be obtained from the CGTA prior to installation. Where absolutely necessary and approval given, they shall be kept to a minimum and removed upon completion of work with any affected areas repaired afterward using 1% Nickel welding electrodes and ground flush with the surrounding plating. Contractor shall repair the coating in these areas as per the vessels painting scheme and the manufacturer's recommendations.
12. 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.
13. Contractor must ensure all piping is drained prior to being cut away to access areas in way of transom insert and exhaust piping installations. Contractor must ensure piping is isolated, prior to cutting section away. Contractor is responsible for the removal of all liquids and there disposal. Contractor must supply certificate identifying all liquids had been disposed of in an environmentally safe manner as per Federal, Provincial or Municipal government requirements covered for the geographic location. Contractor is responsible for the removal and disposal of all debris as a result of this work.
14. Removed piping to be sealed, protected from damage and stored until completion of work and reinstalled. Contractor is responsible for preparing the removed sections of piping for reinstallation.
15. Contractor to perform NDT testing for all reinstalled piping at their new connections utilizing MPI (Magnetic Particle Inspection) and Dye Penetrant to confirm their acceptance to a certified NDT technician. Actual test method utilized will be based on the NDT technician's recommendations. Reinstalled piping shall be inspected by ABS surveyor and approved prior to acceptance. Final acceptance will be through functional test where applicable as directed by the CGTA.

16. The MSPV vessels fall under CCG's National Weight Tracking program. As such, an estimated weight of all equipment to be fitted within the scope of the project is to be submitted to CCG Technical Authority prior to the commencement of any work. Further, actual weight of material used will be tracked and submitted to CCG Technical Authority following the completion of the work, along with an estimate for the centre of gravity of the added weight relative to the vessel. For things such as cabling, a before and after weight of cable spools can be used, or other generally accepted method. In the event that another method is chosen, the contractor must seek approval from the Technical Authority.

17. **Steering equipment** – IF the steering equipment is disconnected to access the area where this work is taking place, the contractor must arrange an FSR from Jastram to recalibrate the steering system following ALL transom work and refloating of the vessel. The steering system must be verified in function when the vessel is put back into the water following undocking. The Contractor must include an allowance of \$10,000 in their bid for a Jastram FSR to attend the vessel and recalibrate/restore the steering system back to it's original operation.

2.2 Location

1. Aft steering compartment and vessel transom area,

2.3 Interferences

1. Contractor is responsible for the identification of any interference items, their temporary removal, storage, and refitting to 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

- i. As per specification prepared by Lengkeek Vessel Engineering
- ii. 6094-2510-01 Arrangement of exhaust gas piping for main engine and diesel generators

3.2 Standards and Regulations

- iii. Canada Shipping Act, 2001: Marine Machinery Regulations (SOR/90-264)
- iv. Lloyd's register, Rules & Regulations for the Classification of Special Service Craft
- v. Canadian Coast Guard Welding Specification, CT-043-eq-eg-001-E, March 2014, EKME#3049715v3A .
- vi. Canadian Coast Fleet Safety Manual (DFO 5737)
- vii. Coast Guard ISM Lock Out/Tag Out Procedures
- viii. Coast Guard Hot-work Procedures & Gas freeing

ix. Transport Canada "GUIDE TO STRUCTURAL FIRE PROTECTION" TP 439

3.3 Allowances

1. N/A

3.4 Owner Furnished Equipment

1. Unless otherwise stated all material shall be CFM.

4: PROOF OF PERFORMANCE:

4.1 Inspection

1. As per specification prepared by Lengkeek Vessel Engineering
2. Contractor is responsible for arranging the local ABS 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 Lengkeek Vessel Engineering
2. Contractor's third party inspection organization is to visually inspect and dye penetrant test all new welds to prove they are acceptable (ABS approved) and provide a report of all findings.
3. Final acceptance for all piping reinstallation work is based on all welds passing ABS approved testing and all completed piping work passing a functional/operational test (**ITP**).
4. Final acceptance is based on the satisfaction of the CGTA.

4.3 Certification

1. As per the specification prepared by LVE

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

- 1 Weight control report in metric units (**ITP**).

5.2 Spares

1. N/A

5.3 Training

1. N/A

L-01 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 must carry out annual megger testing of all electrical panels and breakers listed in the document "MSPV Electrical distribution panels and feeders for MEGGER testing", located in the TDP. Contractor must not megger test circuits with either navigation equipment or electronic components. The generator breakers must have their electronic components isolated before they are meggered.
2. Megger Testing must 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 must be tested in a two-step manner. First, the circuit must be tested between load side of circuit breaker and line side of motor starter; and second, between load side of the starter and the motor.
4. Any low readings or defects must be brought to the attention of the CGTA as soon as possible. Repairs must be carried out under PSPC 1379 action.
5. Contractor must provide an electronic report, recording all readings and any repairs completed to the CGTA and ship's management.

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

3: REFERENCES:

3.1 Guidance Drawings/Nameplate data

1. AF -6098-32000-01 combined single line electrical diagram

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 must 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. N/A

4.3 Certification

1. N/A

5: DELIVERABLES:

1. Reports, Drawings and Manuals:

The Contractor must provide to the CGTA **(ITP)**:

- a. Electronic report given to the vessel of all readings taken.
- b. Updated reports for any circuits and/or deficiencies corrected with 1379 action.

2. Spares

1.N/A

3. Training

1.N/A

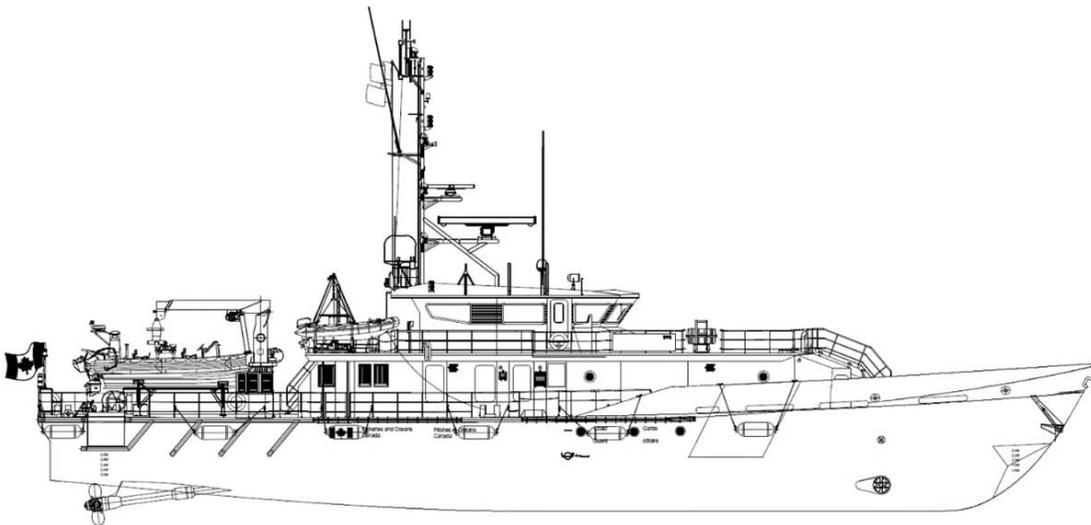
T-01 SOUNDER REPLACEMENT

1. SCOPE OF WORK

The intent of this specification is for the Contractor to replace the Simrad ES70 Echo Sounder System installed on the CCGS Corporal Peddle C.V. with a Simrad S5100 Echo Sounder System. The Simrad S5100 System is the new national standard for MSPVs.

The specification consists of the removal of the existing Simrad ES70 Echo Sounder System equipment and the installation of the new Simrad S5100 Echo Sounder System equipment. There will be modifications to the hull, including a new blister designed to hold the new Depth Sounder transducer and the existing Speed Log transducer.

The existing Depth Sounder transducer location will no longer be used and this location will be repaired to match the surrounding area.



NOTE #1: Completion of the work in this document will require HOT WORK and PAINTING on the bottom of the hull. CONFINED SPACE ENTRY will be needed to access the transducer cabling.

NOTE #2: Wiring between the Electronic Equipment Room and the Bridge may pass through the Galley.

NOTE #3: The post in the centre of the wheelhouse immediately forward of the GMDSS console contains cable routing for this install. The post is riveted and glued together. The contractor must carefully cut the post open to access the cable tray. When the cable runs are complete the contractor must repair the post to match existing.

Pictures in this document may vary from what actually exists depending on the stage of the installation or could be from a sister ship that carries the same equipment. They are to be used as location references only.

2. TECHNICAL DESCRIPTION

2.1. General

- 2.1.1. Prior to commencement of the work the Contractor must inform the Chief Engineer.
- 2.1.2. The Contractor must ensure that all electrical systems which may be affected by their work have been locked out and tagged out before commencement of any work.
- 2.1.3. The Contractor must ensure all work areas are neat and tidy at the end of the work day.
- 2.1.4. The Contractor must clean up all debris (including any removed wiring) and dispose of it as per Provincial Regulations.
- 2.1.5. The Contractor must ensure all removed deck-head and bulkhead panels are returned and fitted in good order and that all visible surfaces of the panels are cleaned to as found condition.
- 2.1.6. The Contractor must store all materials as instructed by Chief Engineer.
- 2.1.7. The Contractor must paint any new steel as directed by the CGTA/MSPV onboard maintenance plan included in the TDP, before installation of equipment.
- 2.1.8. The Contractor must repaint any areas damaged during the relocation, installation, or removal of equipment as directed by the Chief Engineer.
- 2.1.9. The Contractor must ensure all wiring is properly supported in accordance with TP127E
- 2.1.10. The contractor must secure all new and disturbed wiring using existing cable trays.
- 2.1.11. When installing wiring in locations where trays do not exist the contractor must install the wiring using appropriate hangers.
- 2.1.12. The Contractor must ensure all penetrations through frames or brackets are in accordance with ABS.
- 2.1.13. The Contractor must ensure all disconnected cables are labelled, stowed and protected.
- 2.1.14. The Contractor must ensure all unused electrical penetrations are closed in accordance with TP127E.
- 2.1.15. The Contractor must ensure all new and existing electrical penetrations are properly prepared and cleaned prior to hot work.

- 2.1.16. The Contractor must ensure that the surrounding area is properly cleaned to ensure the area is safe prior to any hot work.
- 2.1.17. The Contractor must provide and install all temporary staging, lifting appliances, and rigging.
- 2.1.18. Workers working aloft must be Fall Arrest Certified.
- 2.1.19. The installation must not be considered complete, until relocated or installed equipment has been tested, and considered operating as per the manufacturers specifications, to the satisfaction of the Chief Engineer, Class and/or Flag as applicable.

Work Overview

- 2.1.20. The Contractor must remove the components and cabling of the original Sounder System (except where specified) as detailed later in the document. This includes:
 - 2.1.20.1. Simrad ES70 Processor
 - 2.1.20.2. Simrad Echo Sounder Transceiver
 - 2.1.20.3. Echo Sounder Transducer
 - 2.1.20.4. Hatteland 15” Display
 - 2.1.20.5. Cabling (As Outlined in the Cable Removal Table)
- 2.1.21. The Contractor must repair any damage to the hull plating where the Echo Sounder Transducer was removed.
- 2.1.22. The Contractor must temporarily remove and store the existing Speed Log Transducer.
- 2.1.23. The Contractor must fabricate a new blister for mounting the new Echo Sounder Transducer and the Speed Log Transducer as shown in the provided drawings.
- 2.1.24. The Contractor must install a new Sounder System as detailed in this document.
 - 2.1.24.1. Simrad S2016 Fish Finder (Display)
 - 2.1.24.2. Simrad S5100 Sonar Module (Sounder Unit)
 - 2.1.24.3. Airmar CM265 Transducer
 - 2.1.24.4. Transducer Blister
 - 2.1.24.5. Four Junction Boxes
 - 2.1.24.6. Cabling (As Outlined in the Cable Installation Table)
- 2.1.25. Contractor must reinstall the Speed Log Transducer into the new Transducer Blister.
- 2.1.26. The Contractor must relocate any interference items as detailed in this document or directed by the On-Site CCG Technical Representative or their delegate
- 2.1.27. The contractor must coordinate with the CCG On-Site Technical Representative and/or the ship’s crew to ensure all affected equipment is powered down safely.
 - 2.1.27.1. Before any work proceeds the contractor must ensure all affected equipment is powered off. This is known to include the following breakers which are to be turned off and proper lockout/tagout procedures applied:
 - E1-01 (Sounder Processor)
 - E1-19 (Sounder Transceiver and Repeaters)

- E1-37 (Speed Log)
- E2-05 (Sounder Main Display)
- E2-07 (Speed Log)

2.1.28. The contractor must store and return any removed equipment to the CCG. The timing for this activity must be coordinated with the CCG On-Site Technical Representative

Bridge Equipment Removal

- 2.1.29. The contractor must disconnect and remove the Simrad ES-70 Sounder Processor from the Chart Table.



Photo #1 – Existing Sounder Processor

- 2.1.30. The contractor must disconnect and remove the printer connected to the Simrad ES-70 Sounder Processor if it has not already been removed.
- 2.1.31. The contractor must disconnect and remove the 15” Hatteland Display from the post above the Chart Table.



Photo #2 – Existing Sounder Display

- 2.1.32. **Retain the pole mounting hardware – this will be reused.**
- 2.1.33. The contractor must remove all cabling connected to the equipment described above as specified in the Cable Removal Table.

Electronic Equipment Room (EER) Equipment Removal

- 2.1.34. The Contractor must disconnect and remove the Echo Sounder Transceiver Unit from the EER.

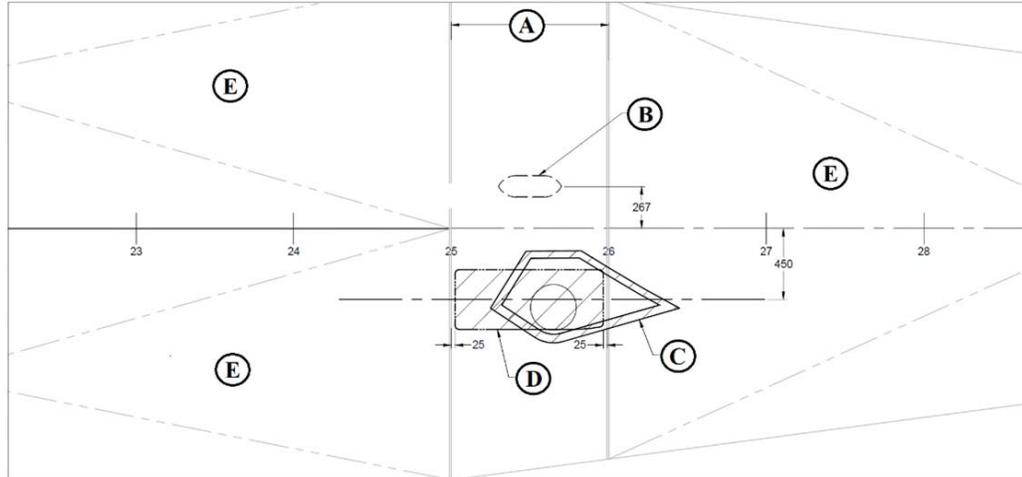


Photo #3 – Echo Sounder Transceiver Unit

- 2.1.34.1. The contractor must remove all cabling connected to the equipment described above as specified in the Cable Removal Table.

Hull Structure and Equipment Removal

- 2.1.35. The Contractor must remove the Echo Sounder and Speed Log Transducers along with their associated blisters from the bottom of the Hull.



Drawing Excerpt #1 – Strip-Out Plan for Bottom Shell (Existing Transducers)

- A: Cofferdam**
- B: Existing Echo Sounder Blister (To be Removed)**
- C: Existing Speed Log Blister (To be Removed)**
- D: Crop-Out Bottom Shell Plate (For new Blister)**
- E: Fuel Oil Tanks**

- 2.1.35.1. The Contractor must disconnect and remove the ES 70 Echo Sounder Transducer and cable from the bottom of the hull.
- 2.1.35.2. The Contractor must remove the Echo Sounder Blister from the bottom of the Hull.
- 2.1.35.3. The Contractor must disconnect and remove the Speed Log Transducer and Cable (TRS-020) from the bottom of the hull **with the whole length of cable still attached** – this transducer is being reinstalled into the new blister as specified in the installation section.
- 2.1.35.3.1. If possible retain the mounting ring for the Speed Log Transducer for use during reinstallation of this equipment – otherwise a new one must be fabricated as specified in the installation section.
- 2.1.35.4. The Contractor must remove the Speed Log Blister from the bottom of the Hull.

NOTE: THE SPEED LOG TRANSDUCER AND CABLE MUST BE PROTECTED FROM DAMAGE – THE TRANSDUCER WILL BE REINSTALLED IN THE NEW BLISTER

Cable Removal Summary

2.1.36. The Contractor must remove and dispose of the cables listed below unless otherwise instructed by the CCG On-Site Technical Representative.

2.1.36.1. Refer to drawing C182-007-BD.dwg (ES 70 Echo Sounder).

Table 1 Cable Removal List

CABLE LABEL	CABLE TYPE	FROM	TO
Unknown/Unlabelled	Electrical	ES 70 Sounder Processor at Chart Table	120V ac Outlet below the Chart Table Shelf
ECHO VGA CABLE-01	Video (VGA)	ES 70 Sounder Processor at Chart Table	12" Hatteland Display above Steering Console
PRINTER CABLE	Data	ES 70 Sounder Processor at Chart Table	Printer at Chart Table
Unknown/Unlabelled	Electrical	Printer at Chart Table	Electrical Outlet at Chart Table
ECHO DVI CABLE-02	Video (DVI)	ES 70 Sounder Processor at Chart Table	15" Hatteland Display above Chart Table
Unknown/Unlabelled	Electrical	15" Hatteland Display above Chart Table	Electrical Outlet at Chart Table
AUX CABLE	Data	ES 70 Sounder Processor on Chart Table Shelf	Connected to cable labelled DEPTH-DIST in Chart Table
DEPTH-DIST	Data	Connected to cable labelled AUX CABLE at Chart Table	PRO-BUF-1 NMEA distribution device below Chart Table
TRS-030	Data (CAT5E)	ES 70 Sounder Processor on Chart Table Shelf	Echo Sounder Transceiver Unit in EER
ECHO TRANSDUCER CABLE	Electrical	Echo Sounder Transceiver Unit in EER	Scanner Control Unit located inside Wheelhouse Central Steering Console
Unknown/Unlabelled	Electrical	Echo Sounder Transceiver Unit in EER	Electrical Outlet in EER

Cable Disconnection Summary

2.1.37. The Contractor must temporarily disconnect and protect of the cable shown below.

2.1.37.1. Refer to drawings C182-007-BD.dwg (ES 70 Echo Sounder) and C182-013-BD.dwg (Speed Log).

CABLE LABEL	CABLE TYPE	DISCONNECT FROM
DEPTH-DIST	Data	ES-70 Processor above Chart Table
POS-009	Data	ES-70 Processor above Chart Table
*TRS-020	Data	Speed Log Pre-Amplifier in EER

***NOTE: THE SPEED LOG TRANSDUCER IS BEING TEMPORARILY REMOVED. THE TRANSDUCER AND CABLE MUST BE PROTECTED FROM DAMAGE – THE TRANSDUCER WILL BE REINSTALLED IN THE NEW BLISTER**

Bridge Equipment Installation

- 2.1.38. The Contractor must install the Simrad S2016 Display on the existing post above the Chart Table where the 15” Hatteland Display was removed.

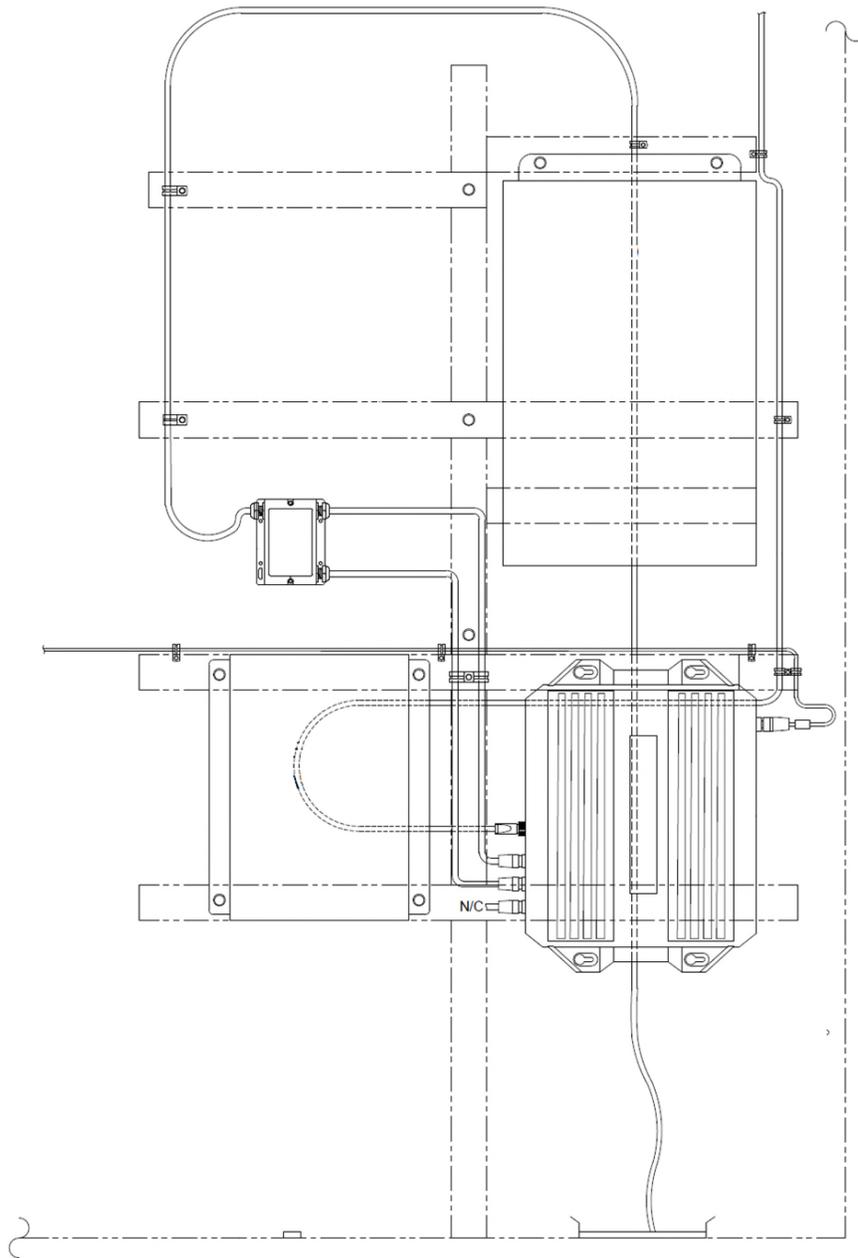


Photo #4 – Sounder Display Location

- 2.1.38.1. Reuse the existing pole mounting hardware.
- 2.1.38.2. CCG will provide a custom bracket for this purpose.

Electronic Equipment Room (EER) Equipment Installation

- 2.1.39. The Contractor must install the Simrad S5100 Sounder Unit in the EER where the Echo Sounder Transceiver Unit was removed. The CCG On-Site Technical Representative will choose the exact location for the equipment.
- 2.1.40. The Contractor must install the Airmar/Simrad Transducer Junction Box in the EER near the Echo Sounder Transceiver Unit was removed. The CCG On-Site Technical Representative will choose the exact location for the equipment.



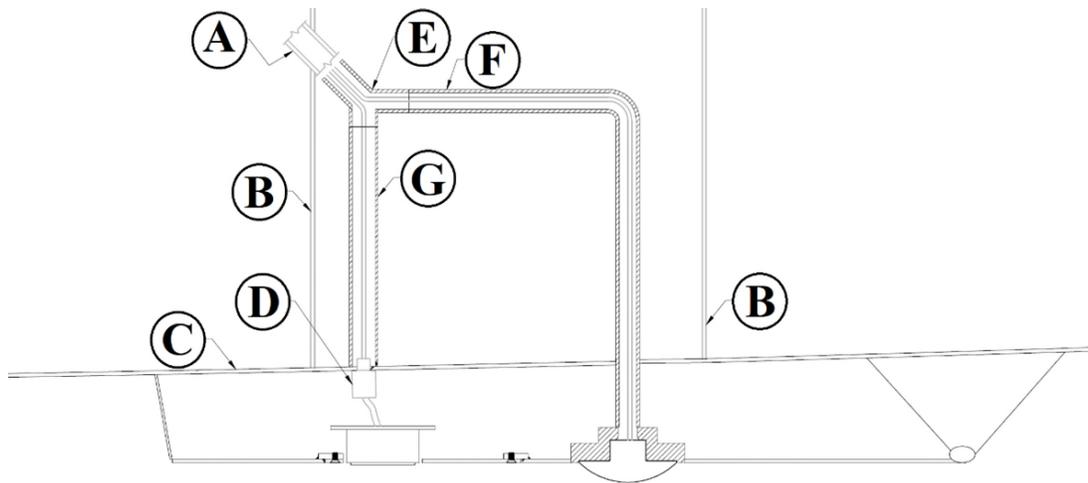
Drawing Excerpt #2 – Example Installation of S5100 and Transducer Junction Box

Hull Modifications/Repairs and Equipment Installation

NOTE: TRANSDUCERS ARE SENSITIVE EQUIPMENT. TRANSDUCERS MUST BE PROTECTED FROM ALL FORMS OF DAMAGE – INCLUDING MECHANICAL, HEAT, AND ELECROMAGNETIC. TRANSDUCERS MUST BE REMOVED DURING ANY HOT WORK

2.1.41. The Contractor must fabricate and install the Transducer Blister in accordance with drawing AF6102-18-48-428-01.

2.1.41.1. The Contractor must install pipes and watertight cable glands in the hull in accordance with the guidance design and the reference drawings.



Drawing Excerpt #3 – Pipes and Gland for Transducer Blister

A: Bottom End of Existing Transducer Pipe (After being Cut)

B: Existing Bulkheads

C: Existing Shell Plate

D: New Watertight Cable Gland

E: New Custom Y Pipe (To be Fabricated by Contractor)

F: New NPS 2” Pipe (Length to be Determined by Contactor On Site)

G: New NPS 2.5” Pipe (Length to be Determined by Contactor On Site)

2.1.41.1.1. Cable Glands must be watertight and must be suitable for underwater through-hull applications, and ABS approved.

2.1.41.1.2. Cable Glands must be sized appropriately for the cable that will pass through the gland.

2.1.41.1.3. Cable Glands must be installed where the cables pass through the cofferdam top plating

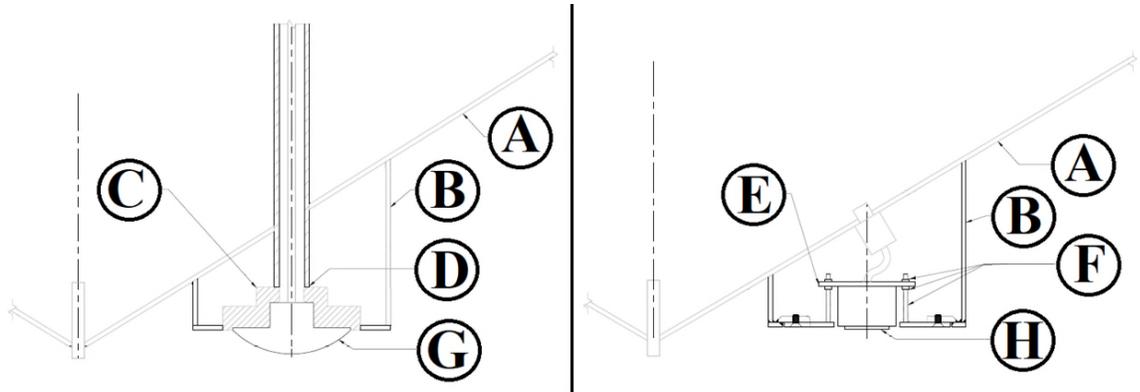
- 2.1.42. The Contractor must fabricate the Transducer Blister in accordance with the guidance drawing.



Photo #4 – Example of a new Transducer Blister before Installation

- 2.1.42.1. The Transducer Blister must be fabricated from ABS Grade A (or equal) steel, and fully welded.
- 2.1.42.2. New material only must be used for fabricating the Transducer Blister.
- 2.1.42.3. The Transducer Blister must be of non-watertight construction, with air and drain holes provided in accordance with the guidance drawings. These openings are to allow the structure to flood and drain when the vessel is in the water
- 2.1.42.4. The Transducer Blister has a vertical 19mm thick steel plate at the front to prevent logs, ropes and flotsam from becoming trapped by the blister. The leading edge of this must be ground smooth by the Contractor with a 19mm diameter rounded profile along the entire length
- 2.1.42.5. The Contractor must fit the leading edge of the blister with a 1-1/4" diameter schedule 80 pipe. The purpose of this pipe must be minimize flow separation (and consequently turbulent flow)
- 2.1.42.6. The Contractor must grind all edges of the blister smooth in accordance with the guidance drawing.
- 2.1.42.7. The Contractor must fabricate the Transducer Blister with a mounting ring for the Speed Log Transducer and the bolting and top plate arrangement for the Sounder Transducer.
- 2.1.42.7.1. Transducer mountings must be either fabricated by the Contractor, or purchased from the vendor. If fabricated by the Contractor, they are to be fabricated in accordance with the appropriate reference drawing.
- 2.1.42.8. The Contractor must weld the transducer blister to the hull in accordance with the guidance drawing.

- 2.1.42.9. The Contractor must install Access Plates in accordance with the guidance drawing. These are placed over openings that are only used when completing hot work during installation. **The Plates must form a watertight seal when closed up.** Holes for water flow and draining are provided elsewhere in the design.
- 2.1.43. The Contractor must install the transducers in the new Transducer Blister in the locations specified on the guidance drawing.



Drawing Excerpt #4 –Transducer Installations (Viewed from Front)

- A: Existing Shell Plate**
- B: Side of New Transducer Blister**
- C: Mounting Ring for Speed Log Transducer**
- D: Mounting Ring Welded to New NPS 2” Pipe (Watertight Connection)**
- E: New Transducer Mounting Plate (To be Fabricated by Contractor)**
- F: Threaded Rods Welded to inside of Transducer Blister**
- G: Speed Log Transducer (Existing - To be Reinstalled in New Blister)**
- H: New Echo Sounder Transducer**

- 2.1.43.1. Each Transducer must be mounted in accordance with the requirements of the reference documentation for that transducer.
- 2.1.43.2. Each Transducer must be oriented correctly with the forward direction oriented towards the bow of the vessel.
- 2.1.43.3. The Contractor must route the cables for each Transducer to the terminating equipment as per the existing Transducer cable routing and arrangement. Where possible, cables are to be run to the equipment in a single continuous run.
- 2.1.43.4. The Contractor must provide each cable run with service loop at both the Transducer end and the Terminating Equipment end.
- 2.1.43.5. The Contractor must engage with the respective transducer vendors’ Field Service Representatives to carry out commissioning and calibration of the transducers.

- 2.1.44. The Contractor must paint the Transducer Blister, Cofferdam, and any disturbed areas resulting from the work in this document.
- 2.1.44.1. **Transducers are NOT to be painted** - All new steel and welded areas must be painted prior to the installation of the transducers. All transducers installed at the time of painting are to be protected from paint.
- 2.1.44.2. All painting must be in accordance with Canadian Coast Guard Paints and Coatings Standard 18-080-000-SG-003. The specification of the paint must be confirmed with the Owner prior to application.
- 2.1.44.3. The contractor must paint all new materials (except the Transducers).
- 2.1.44.4. Any existing paint that is disturbed or damaged in any way during the work must be stripped and repaired by the Contractor
- 2.1.44.5. All fixtures and adjacent surfaces must be properly protected during painting.
- 2.1.44.6. All new surfaces must be thoroughly clean and dry and free of grease or oil before painting is commenced.
- 2.1.44.7. All plates and shapes used in construction and all areas in way of new paint must have surface preparation performed according to the paint manufacturer's specifications to completely remove scale, rust, and other surface contaminants.
- 2.1.44.8. The Contractor must take care when applying paint to the inside of angled members and other difficult areas to ensure full build-up of coatings is attained.
- 2.1.44.9. Removal and disposal of all hazardous wastes from painting (residuals) must be in accordance with local and provincial environmental regulations.
- 2.1.44.10. The Contractor must apply primer coats to clean metal surfaces per the manufacturer's specifications. Primer must be uniform, free of pinholes and holidays, and compatible with specified coating systems. The method of application and all work must be performed in strict accordance with the manufacturer's instructions and as specified herein.
- 2.1.45. Any existing internal structure that has been damaged by the installation or removal of the transducers must be repaired by the Contractor as per the surrounding structure (note frames 25 and 26, ABS Grade A, thickness to match existing hull plate thickness).
- 2.1.45.1. New material only must be used for any structural repairs.
- 2.1.46. The Contractor must reinstall any items that were temporarily stripped out for access and must return the affected areas to the condition in which they were found. It is the responsibility of the Contractor to repair any damage caused during construction.

Grounding of Equipment

- 2.1.47. The Contractor must ground the system components as per the manufacturer's specifications and the instructions below:

Simrad S2016

The contractor must ground the Simrad Display to the ship's hull via the ground lug using 14 AWG (or larger) green jacketed wire. The bonding wire is to be kept as short as possible. The CCG On-Site Technical Representative will choose the exact location used for grounding.

Simrad S5100 Sounder Unit

The contractor must ground the S5100 Sounder Unit using 16AWG (or larger) green jacketed wire as per page 9 of the installation manual. The bonding wire is to be kept as short as possible. The CCG On-Site Technical Representative will choose the exact location used for grounding.

Any additional equipment being installed or relocated which requires grounding must be grounded by the Contractor as per the manual and/or as directed by the CCG On-Site Technical Representative.

Cable Installation

2.1.48. The Contractor must install, label, and terminate cables as per table below.

2.1.48.1. Refer to drawing C182-046-BD.dwg (S5100 Echo Sounder) and C182-013-BD.dwg (Speed Log).

Table 2 Cable Installation List

CABLE LABEL	CABLE TYPE	FROM	TO	EST. LENGTH (FT)
DEPTH-HDMI	HDMI	Simrad S2016 Display above Chart Table	Existing Hatteland 12" Display Above Steering Console	10
DEPTH-ETHERNET	FACTORY (ETHERNET)	Simrad S2016 Display above Chart Table	Simrad S5100 Sounder Unit in EER	50
DEPTH-NMEA	FACTORY (000-11584-001)	Simrad S2016 Display above Chart Table	New NMEA Junction Box at Chart Table	10
DEPTH-DISPLAY-24VDC-1	FACTORY POWER	Simrad S2016 Display above Chart Table	New 24VDC Junction Box (#2) at Chart Table	6
DEPTH-DISPLAY-24VDC-2	BELDEN 9316	New 24VDC Junction Box (#2) at Chart Table	Existing 24VDC Junction Box (#1) in Mess	50
DEPTH-XDUCER-HIGH	FACTORY (C332)	Simrad S5100 Sounder Unit in EER	Airmar/Simrad Junction Box in EER	5
DEPTH-XDUCER-LOW	FACTORY (C334)	Simrad S5100 Sounder Unit in EER	Airmar/Simrad Junction Box in EER	5
DEPTH-SOUNDER-24VDC-1	FACTORY POWER	Simrad S5100 Sounder Unit in EER	New 24VDC Junction Box (#3) in EER	6
DEPTH-SOUNDER-24VDC-2	BELDEN 9316	New 24VDC Junction Box (#3) in EER	Existing 24VDC Junction Box (#1) in Mess	30
DEPTH-XDUCER	FACTORY (TRANSDUCER)	Airmar/Simrad Junction Box in EER	Airmar CM265 Transducer in New Transducer Blister in Hull	50

CABLE LABEL	CABLE TYPE	FROM	TO	EST. LENGTH (FT)
TRS-020	DATA	Speed Log Pre-Amplifier in EER	Speed Log Transducers in New Transducer Blister in Hull	50

Cable Reuse

2.1.49. The Contractor must connect the existing cables to the new equipment as per table below.

2.1.49.1. Refer to drawing C182-046-BD.dwg (S5100 Echo Sounder)

Table 3 Cable Installation List

CABLE LABEL	CABLE TYPE	CONNECT TO
DEPTH-DIST	DATA	New Junction Box below Chart Table for NMEA Data
POS-009	DATA	New Junction Box below Chart Table for NMEA Data

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2.2. Locations

- 2.2.1. Various locations identified in the general technical description.

2.3. Interferences

- 2.3.1. The Contractor is responsible for the identification of interference items which may affect the relocation, removal, or installation of equipment, their temporary removal, their storage and protection, and their refitting to the vessel.
- 2.3.2. The contractor is responsible for protecting the surrounding area and equipment while carrying out this work

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3. SCOPE OF WORK

3.1. Guidance/Drawings/Data

3.1.1. CCG must provide contractor access to the relevant system drawings and documents:

- a. Existing Simrad ES-77 Drawing (Reference for Removal)
Dwg. C182-007-BD (REV A)
- b. New Simrad S5100 Drawing (Reference for Installation)
Dwg. C182-046-BD (REV A)
- c. Transducer Blister Arrangement Details (Reference for Installation)
18-48-428-01 CCGS MSPV Transducer Blister R0.pdf

3.2. Standards and Regulations

3.2.1. The following standards, regulations, and/or technical bulletins must be adhered to in the course of executing this specification. Copies of these standards and bulletins can be obtained from the CGTA:

- a. Canadian Coast Guard Fleet Safety and Security Manual (DFO/5737)
- b. TP127 – Ship’s Electrical Standards
- c. IEEE 45:2002 – Recommended Practice for Electrical Installation on Ships
- d. Specification for the Installation of Shipboard Electronic Equipment
(70-000-000-EU-JA-001)
- e. Canadian Coast Guard ISM Lock Out/Tag Out Procedures
- f. Canada Shipping Act, 2001
- g. CT-043-EQ-EG-001-E – CCG Welding Specification
- h. 18-080-000-SG-003 – CCG Paints and Coating Standard

3.3. Owner Furnished Equipment

3.3.1. The following materials and equipment will be provided by the CCG:

- a. Simrad Sounder System
 - Simrad S5100 Sounder Unit
 - Simrad S2016 Display w/ custom bracket
 - Airmar CM265 Transducer w/ Junction Box
 - Junction Boxes for DC Power and NMEA Connections (x3)

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- b. All cables listed below
 - Belden 9316 Cable (1 Pair 16 AWG)
 - HDMI Cable
 - Simrad 50ft Ethernet Cable with Proprietary Connectors
 - Simrad 10M/30FT NMEA Cable
 - Green Jacket Gnd Wire (14 AWG)

3.4. Contractor Furnished Equipment

- 3.4.1. The following materials and equipment must be provided by the Contractor:
 - Transducer Blister
 - All materials required for the changes to the Hull
- 3.4.2. Unless otherwise stated, Contractor must provide all materials, labour, and equipment required to complete all tasks in this specification including stainless steel hardware, cable ties, and cable hangers where needed.
- 3.4.3. All labour required to complete the cleaning, including that required for removals, reinstallation, opening, and closing up of equipment and ducting is the Contractor's responsibility.

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4. PROOF OF PERFORMANCE

4.1. Inspection

- 4.1.1. The Contractor must afford the TA an opportunity to witness all welding carried out during the installation of the new transducer blister.
- 4.1.2. The Contractor must carry out weld inspections in accordance with the CCG Welding Specification CT-043-eq-eg-001.
- 4.1.3. The contractor is responsible for protecting the surrounding area and equipment while carrying out this work.
- 4.1.4. The CCG Technical Representative must verify all equipment and wiring has been installed in good working order.
- 4.1.5. The CCG Technical Representative must verify that all spaces affected by the installation of equipment or and/or wiring have been cleaned and that all debris (piping, etc.) has been removed from any area where work was performed.
- 4.1.6. The CCG Technical Representative must verify that all equipment in the areas affected by the installation of equipment or and/or wiring is fully operational after cleaning is complete.
- 4.1.7. All work by the contractor must be completed to the satisfaction of the Chief Engineer, Class/Flag and the manufacturer, as applicable.
- 4.1.8. The Contractor is responsible for all air quality testing to ensure hot work and confined space entry is permitted
- 4.1.9. The Contractor must issue and post hot work permits and must maintain a fire watch.

4.2. Testing

- 4.2.1. N/A.

4.3. Certification

- 4.3.1. The CCG Technical Representative must perform standard radio checks to confirm all equipment is operating correctly within CCG and / or the manufactures specifications.

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- 4.3.2. Welders must be CWB certified
- 4.3.3. Chemists must be certified
- 4.3.4. Technicians for NDT testing must be certified
- 4.3.5. Workers working aloft must be Fall Arrest certified
- 4.3.6. The Contractor must provide a copy of the class society material certificate for each plate used in accordance with the Documentation section of the General Notes.
- 4.3.7. The Contractor must provide copies of all company or individual welding certificates indicating compliance with CSA regulations referenced. All certificates must be provided to the TA in accordance with the Documentation section of the General Notes.
- 4.3.8. The Contractor must provide copies of the NDT technician's or company's certification in accordance with ISO 9712:2005 International Standards for NDT.
- 4.3.9. Calibration certificates for all transducers affected by this project must be provided to the TA.

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5. Deliverables

5.1. Reports

- 5.1.1. The Contractor must submit to the TA a report of all NDT test results in accordance with the Documentation section of the General Notes

5.2. Drawings to be Updated by Contractor

- 5.2.1. The Contractor must provide a drawing indicating location of all plates used with its corresponding mill certificate numbers in accordance with the Drawings section of the General Notes.

5.3. Spares

- 5.3.1. N/A – Intentionally Left Blank

5.4. Training

- 5.4.1. N/A – Intentionally Left Blank

5.5. Others

- 5.5.1. The Contractor must provide copies of all approved welding procedures in accordance with the Documentation section of the General Notes

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T-02 SATELLITE RADIO SYSTEM

1. SCOPE OF WORK

This project consists of the installation of a Radio (comprised of a display, Sirius XM tuner, two speakers, and a power supply) in a rack in the command centre, along with two antennas on the top of bridge deck. The system will also be connected with the Integrated Communications System in the Electronics Room. All electronic equipment and cabling to be installed is CCG supplied unless otherwise noted.

NOTE: Pictures in this document may vary from what actually exist depending on the stage of the installation. Any pictures are to be used as location references only.

2. TECHNICAL DESCRIPTION

2.1 General

1. Prior to commencement of the work the Contractor shall inform the Chief Engineer.
2. The Contractor shall ensure that all electrical systems which may be affected by their work have been locked out and tagged out before commencement of any work.
3. The Contractor shall ensure all work areas are neat and tidy at the end of the work day.
4. The Contractor shall clean up all debris (including all old wire that is taken out) and dispose of it as per Provincial Regulations.
5. The Contractor shall ensure all removed deck-head and bulkhead panels are returned and fitted in good order and that all visible surfaces of the panels are cleaned to as found condition.
6. The Contractor shall store all materials as instructed by Chief Engineer.
7. The Contractor shall paint any new steel as directed by the Chief Engineer before installation of equipment.
8. The Contractor shall repaint any areas damaged during the relocation, installation, or removal of equipment as directed by the Chief Engineer.
9. The Contractor shall ensure all wiring is properly supported in accordance with accepted / approved practices.
10. The contractor must properly secure all installed and disturbed wiring using existing cable trays.

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11. When installing wiring in locations where trays do not exist the contractor must install the wiring using appropriate hangers.
12. The Contractor shall ensure all penetrations through frames or brackets are in accordance with ABS.
13. The Contractor shall ensure all electrical disconnections are labelled, stowed and protected.
14. The Contractor shall ensure all unused electrical penetrations are closed in accordance with TP127E
15. The Contractor shall ensure all new and existing electrical penetrations are properly prepared and cleaned prior to hot work.
16. Any welding by the contractor shall be completed to CWB's latest revision, or equivalent.
17. The Contractor shall ensure that the surrounding area is properly cleaned to ensure the area is safe prior to any hot work.
18. The Contractor shall provide and install all temporary staging, lifting appliances and rigging.
19. Workers working aloft must be Fall Arrest Certified.
20. The Contractor is responsible for all air quality testing to ensure hot work and entry is permitted.
21. The Contractor shall issue and post hot work permits and shall maintain a fire watch.
22. Areas where hot work is to be carried out are to be certified by a Chemist or other qualified person as determined by the CGTA or delegate.
23. All Welders, Chemists, and Technicians for NDT testing must be certified.
24. The installation shall not be considered complete until all relocated or installed equipment has been tested and considered operating as per the manufacturer's specifications, to the satisfaction of the Chief Engineer, Class, and/or Flag as applicable.

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Wheelhouse Top Antenna Installation

25. The contractor must install two antenna on the top of bridge deck. The suggested locations for these antennas are shown below in the excerpt from drawing G028001AL (a larger version is available in the References section of this document).

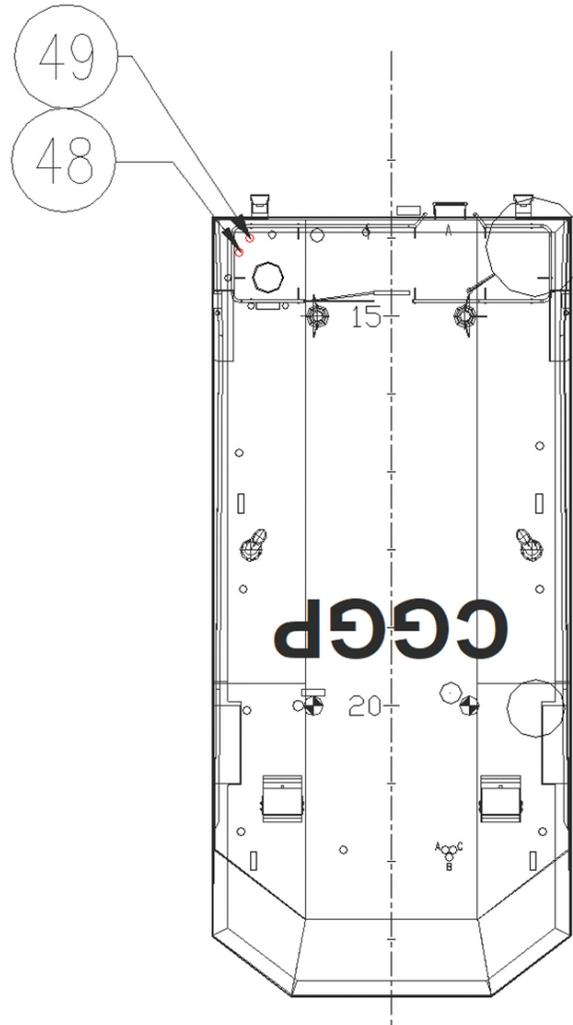


Photo #1 – Suggested Location for FM and XM Antennas on Bridge Top

25.1 The contractor must install the FM Radio antenna using the provided mount as directed by the CCG On Site Technical Representative. The suggested location is on the starboard railing aft on top of bridge deck (location 48).

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25.2 The contactor must install the Shakespeare SRA-50 antenna using the provided mount as directed by the CCG On Site Technical Representative. The suggested location is on the aft railing on top of bridge deck (location 49).

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Command Centre Equipment Installation

25.3 The Contractor must install the following equipment inside the rack located in the Command Centre section of the Wheelhouse as directed by the CCG On Site Technical Representative.

The contractor must adjust the position of items in this rack if needed as directed by the CCG On Site Technical Representative.

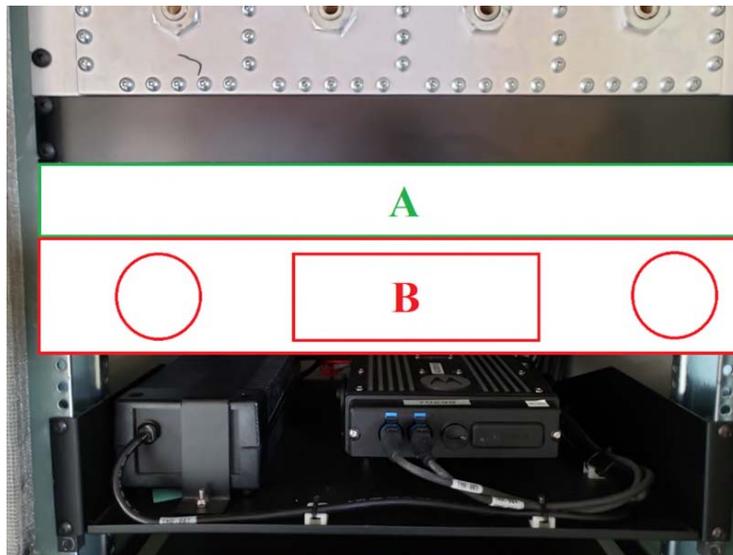


Photo #2 – Suggested Location for Sat Radio Display & Speakers

A- Existing KVM for Radar (Installed during last refit)

B- New Plate for Radio/Tuner/Speakers

25.3.1 The Contractor must install a Fusion RA670 radio/display.

25.3.2 The Contractor must install a SXV300B tuner.

25.3.3 The Contractor must install 2 small speakers for testing the radio.

25.3.4 The Contractor must install a 12VDC Power Supply (PSU).

25.3.4.1 The Contractor must install a piece of din rail for mounting the PSU.

25.3.5 The Contractor must install an RCA Stereo-to-Mono Converter.

25.3.6 The Contractor must install a Hose-McCann Analog-to-Digital Converter.

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26.1 The contractor must install all connectors and adapters as shown on the drawing G028-045-WD as directed by the CCG On Site Technical Representative.

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Cable Installation

27.1 The contractor must install, label and terminate the following cables as per Drawing G028-045-WD and the instructions in this document, or as directed by the CCG On Site Technical Representative.

Table 1

CABLE LABEL	CABLE TYPE	FROM	TO	EST. CABLE LENGTH (FT)
SRAD-1	LMR-400FR	SRAD-1-1 via splice in Command Centre Rack	XM Radio Antenna on Top of Bridge Aft Rail	50
SRAD-1-1	Factory "Pigtail" Cable	SXV300B Tuner in Command Centre Rack	SRAD-1 via splice in Command Centre Rack	1
SRAD-2	LMR-400FR	SRAD-2-1 via splice in Command Centre Rack	FM Radio Antenna on Top of Bridge Aft Rail	50
SRAD-2-1	Factory "Pigtail" Cable	RA670 Radio/Display in Command Centre Rack	SRAD-2 via splice in Command Centre Rack	1
SRAD-3	Factory	SXV300B Tuner in Rack in Command Centre	RA670 Radio/Display in Command Centre Rack	1
SRAD-4	Red Factory Installed Cable	RA670 Radio/Display in Command Centre Rack	New 12VDC Power Supply in Command Centre Rack	1
SRAD-5	Yellow Factory Installed Cable	RA670 Radio/Display in Command Centre Rack	New 12VDC Power Supply in Rack in Wheelhouse Aft Command Centre	1
SRAD-6	Black Factory Installed Cable	RA670 Radio/Display in Command Centre Rack	New 12VDC Power Supply in Command Centre Rack	1
SRAD-7	Factory Power Cable	New 12VDC Power Supply in Rack in Command Centre	110Vac Outlet or Power Bar in Command Centre Rack	5
SRAD-8	Green Factory Installed Cable	RA670 Radio/Display in Command Centre Rack	Left Side Speaker in Command Centre Rack	1
SRAD-9	Green/Black Factory Installed Cable	RA670 Radio/Display in Command Centre Rack	Left Side Speaker in Command Centre Rack	1

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CABLE LABEL	CABLE TYPE	FROM	TO	EST. CABLE LENGTH (FT)
SRAD-10	Purple Factory Installed Cable	RA670 Radio/Display in Command Centre Rack	Right Side Speaker in Command Centre Rack	1
SRAD-11	Purple/Black Factory Installed Cable	RA670 Radio/Display in Command Centre Rack	Right Side Speaker in Command Centre Rack	1
Zone 1 Left	Factory Speaker Cable	RA670 Radio/Display in Command Centre Rack	Stereo To Mono Converter in Command Centre Rack	1
Zone 1 Right	Factory Speaker Cable	RA670 Radio/Display in Command Centre Rack	Stereo To Mono Converter in Command Centre Rack	1
SRAD-ICS-1	Belden 9318	Stereo To Mono Converter in Command Centre Rack	Hose-McCann Analog-to-Digital Converter Box in Command Centre Rack	5
SRAD-ICS	Belden 1319SB	Hose-McCann Analog-to-Digital Converter Box in Command Centre Rack	ICS System Node in Electronics Equipment Room (Leave several feet of cable coiled at the Node for the CCG Tech to Connect)	100

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Grounding of Equipment

28.1 The contractor must ground the system components as per the manufacturer's recommendations.

2.1 Location

1. Various locations identified in the general technical description.

2.2 Interferences

1. The Contractor is responsible for the identification of interference items which may affect the relocation, removal, or installation of equipment, their temporary removal, their storage and protection, and their refitting to the vessel.
2. The contractor is responsible for protecting the surrounding area and equipment while carrying out this work.

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3. REFERENCES

3.1 Guidance/Drawings/Data

1. The CCG must provide contractor access to the relevant system drawings:

A. Satellite Radio System Drawing

Dwg. G028-045-WD

B. Antenna Arrangement Drawing

Dwg. G028-001-AL

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3.2 Standards and Regulations

1. The following standards, regulations, and/or technical bulletins must be adhered to in the course of executing this specification. Copies of these standards and bulletins can be obtained from the CGTA:

- i. Canadian Coast Guard Fleet Safety and Security Manual (DFO/5737)
- j. TP127 – Ship’s Electrical Standards
- k. IEEE 45:2002 – Recommended Practice for Electrical Installation on Ships
- l. Specification for the Installation of Shipboard Electronic Equipment (70-000-000-EU-JA-001)
- m. Canadian Coast Guard ISM Lock Out/Tag Out Procedures
- n. Canada Shipping Act, 2001

3.3 Owner Furnished Equipment

1. The following materials and equipment must be provided by the CCG:

- c. LMR-400FR Cable
- d. LMR-240FR Cable (Or premade Jumper cables)
- e. Belden 9318 Cable
- f. Marine 14/3 Cable
- g. Connectors for LMR400FR
- h. Connectors for LMR240FR (If premade Jumpers are not used)
- i. Satellite Radio Antenna & Mount
- j. FM Radio Antenna & Mount
- k. Satellite Radio/Display with FM Tuner
- l. Satellite Radio Tuner
- m. Adapter Plate for Mounting the Radio/Display
- n. 12VDC Power Supply
- o. Stereo to Mono Converter
- p. RCA Male-to-Male Adapters
- q. RCA Male-to-Breakout Adapter
- r. Hose-McCann Analog-to-Digital Converter

2. Unless otherwise stated the contractor must provide all materials, labour, and equipment required to complete all tasks in this specification including stainless steel hardware, cable ties, and cable hangers where needed.

3. All labour required to complete the cleaning, including that required for removals, reinstallation, opening, and closing up of equipment and ducting is the contractor’s responsibility.

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4. PROOF OF PERFORMANCE

4.1 Inspection

1. The CCG Technical Representative must verify all equipment and wiring has been installed in good working order.
2. The CCG Technical Representative must verify that all spaces affected by the installation of equipment or and/or wiring have been cleaned.
3. The CCG Technical Representative must verify that all equipment in the areas affected by the installation of equipment or and/or wiring is fully operational after cleaning is complete.

4.2 Testing

1. The contractor must check continuity of each cable after any connectors have been installed on both ends.
2. The contractor must work with the CCG Technical Representative to function check the Satellite Radio system at the dock.
3. The Satellite Radio system must be tested by a CCG Technical Representative during Sea Trials to confirm proper functionality.
4. The Satellite Radio system must be proven to be fully operation after the installation is complete.

4.3 Certification

1. N/A – Intentionally Left Blank

5. Deliverables

5.1 Reports

1. N/A – Intentionally Left Blank

5.2 Drawings to be Updated by Contractor

1. N/A – Intentionally Left Blank

5.3 Spares

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1. N/A – Intentionally Left Blank

5.4 Training

1. N/A – Intentionally Left Blank

5.5 Others

1. N/A – Intentionally Left Blank