



**RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:**

**Bid Receiving - PWGSC / Réception des
soumissions - TPSGC**
11 Laurier St. / 11, rue Laurier
Place du Portage , Phase III
Core 0B2 / Noyau 0B2
Gatineau, Québec K1A 0S5
Bid Fax: (819) 997-9776

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

**Proposal 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.

**Proposition 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 sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

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

Title - Sujet SIPU MUIN DRYDOCKING		
Solicitation No. - N° de l'invitation F7049-150229/A		Date 2016-02-19
Client Reference No. - N° de référence du client F7049-150229		
GETS Reference No. - N° de référence de SEAG PW-\$\$MD-032-25686		
File No. - N° de dossier 032md.F7049-150229	CCC No./N° CCC - FMS No./N° VME	
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2016-03-29		Time Zone Fuseau horaire Eastern Standard Time EST
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/>		
Address Enquiries to: - Adresser toutes questions à: Moore(md div), Chris		Buyer Id - Id de l'acheteur 032md
Telephone No. - N° de téléphone (819) 956-1581 ()		FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Specified Herein Précisé dans les présentes		

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée See Herein	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie) Signature Date	

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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 and states that the Bidder agrees to be bound by the clauses and conditions contained in all parts of the bid solicitation;
- Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;
- Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, if applicable, and the basis of selection;
- Part 5 Certifications: includes the certifications to be provided;
- Part 6 Financial and Other Requirements: includes specific requirements that must be addressed by bidders; and
- Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

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

1.2 Summary

- 1.2.1 The Requirement is:
- 1.2.2 To carry out the Mid-Life Modernization refit of the Canadian Coast Guard Vessel CCGS Sipu Muin in accordance with associated technical information and Annex A – Statement of Work.
- 1.2.3 To carry out Unscheduled Work authorized by the Contracting Authority.
- 1.2.4 As per the Integrity Provisions under section 01 of Standard Instructions 2003 bidders must provide a list of all Owners and/or Directors and other associated information as required. Refer to section 4.21 of the Supply Manual for additional information on the Integrity Provisions.
- 1.2.5 The requirement is exempt from the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), Annex 4 and the North American Free Trade Agreement (NAFTA), Chapter Ten Annex 1001.2b Paragraph 1(a). However, it is subject to the Agreement on Internal Trade (AIT). The sourcing strategy relating to this procurement will be limited to suppliers in Eastern Canada, in accordance with Shipbuilding, Refit, Repair and Modernization Policy (2010-08-16).

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

1.3 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 of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

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PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the Standard Acquisition Clauses and Conditions (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) 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 (2014-09-25) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.2 Submission of Bids

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

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than **five (5) Working Days** before the bid closing date. Enquiries received after that time may not be answered.

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

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

2.4 Applicable Laws

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

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

Refer to Annex "J1" for Deliverables/Certifications.

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2.5 Mandatory Site Visit – Vessel

The Bidder or a representative of the Bidder must visit the work site. Arrangements have been made for the site visit to be held on March 10, 2016 at 09:00 at the Canadian Coast Guard Base, 7100 Du Pont Street Trois-Rivières, Quebec G9A 6M2. All visitors have to report to the Main Gate – Commissionaires, where they will sign in and be directed to the main boardroom on the second floor.

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

2.6 Bidders' Conference

A bidder's conference chaired by the CA will be held at Canadian Coast Guard Base, 7100 Du Pont Street Trois-Rivières, Quebec G9A 6M2 on March 10, 2016 directly following the site visit. The scope of the requirement outlined in the solicitation will be reviewed during the conference and questions will be answered. It is recommended that bidders who intend to submit a bid attend or send representation.

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

2.7 Work Period - Marine

Work must commence and be completed as follows:

Commencement: May 10, 2016
Completion: November 15, 2016

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

2.7.1 Additional Instructions to Work Period

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

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

For details please refer to Annex 1 – Vessel Custody, Appendix 1 – Acceptance Certificate

Upon acceptance of the Work for this vessel, this vessel will be returned to the care, control and custody of Canada.

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For details please refer to Annex I – Vessel Custody, Appendix 2 – Acceptance Certificate

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PART 3 - BID - PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

- (a) Copies of Bid: Canada requests that Bidders provide their bid in separately bound sections as follows:

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

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

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

- (b) Format of Bid: Canada requests that bidders follow the format instructions described below in the preparation of their bid:

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

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

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

Section I: Technical Bid

The Bidder must provide all of the deliverables as referenced in Annex "J1" Deliverables/Certifications.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the instructions in this solicitation and the Financial Bid Presentation Sheet in Annex "H", including its Pricing Data Sheets, Appendix 1 to Annex "H", and the Cumulative Pricing Sheet for Evaluation, Appendix 2 to Annex "H". The total amount of Applicable Taxes must be shown separately.

Section III: Certifications

Bidders must submit the certifications required under Part 5.

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3.1.1 Unscheduled Work and Evaluation Price

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

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

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

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

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

Section I - Technical Bid / Certifications

Each bid will be reviewed to determine whether it meets the mandatory requirements of the bid solicitation. Any element of the bid solicitation identified with the words "must" or "mandatory" is a mandatory requirement. Bids that do not comply with each and every mandatory requirement will be declared non-responsive and disqualified. The mandatory requirements are as follows:

- (a) Mandatory deliverables that must be submitted with the Bidder's bid to be deemed responsive are summarized in Annex "J1";
- (b) Bidders must submit an Annex H, Appendix 2 Cumulative Pricing Sheet for Evaluation completed in accordance with the procedures specified below; and
- (c) The costs identified in Article B5 below must be bid in Annex H, Appendix 2 Cumulative Pricing Sheet for Evaluation.

Procedures for Completing Annex H, Appendix 2:

- (1) For an item in the CUMULATIVE PRICING SHEET FOR EVALUATION table for which they wish to bid a price, Bidders must enter their proposed Total Firm Price and Cumulative Price for the item. Ten points are assigned to each item on which a bidder has bid.
- (2) Appendix 2 represents the CCG's prioritization of Work to be completed within the budget available, from the highest priority at item 1 to the lowest priority at the last item. Bidders must bid on each item in the table sequentially, that is by leaving no unbid items at items numbered higher in the table. Skipping an entry of Total Firm Price and Cumulative Price for an item in the sequence will result in the bid being declared non-responsive and disqualified.
- (3) A Bidder is requested to insert "\$0.00" for any item for which it does not intend to charge or for an item that is included in other prices provided in the table. Excepting for remaining cell items as

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identified in 5 below, if the bidder leaves any price blank, or inserts wording other than a price, Canada will treat the price as "\$0.00" for evaluation purposes and may request that a Bidder confirm that the price is, in fact, "\$0.00". No Bidder will be permitted to add or change a price as part of this confirmation. Any bidder who does not confirm that the price for a blank or worded item is "\$0.00" will be declared non-responsive.

- (4) Bidders are to sequentially enter their bids in the CUMULATIVE PRICING DATA SHEET, respecting the order of entries, and continue entering their pricing and cumulative pricing for each spec item. Bidders continue entering their pricing/cumulative pricing on the spec items with the intention of getting their bid as close to \$3,545,000 (without exceeding), and no less than \$3,100,000. If the bidder bids a firm Price on all 13 Work Items with a maximum total of 380 points, a total Firm Price less than \$3,100,000 will be accepted.

The bidding procedure may result in a list of items bid that is shorter than the list of items identified within the Appendix. Once a bidder has entered their pricing sequentially, the totality of items for which they wish to bid has been reached, and their bid is as within the permitted financial range as stated in (4) above, a bidder must stop entering pricing in Appendix 2. This may result in the lowest numbered items being left blank. In this circumstance only, the remaining blank cells will not be interpreted as a bid to do the work for "\$0.00" but will identify Work that will not be included in the resulting Contract.

- (5) Bidders are reminded that the resulting Contract will not permit work not included in the Contractor's bid to be performed during the Contract if it arises, including contracting for it as Unscheduled Work.
- (6) At the point where the bidder stops bidding, the cumulative bid price (not exceeding \$3,545,000.00) is to be entered into Annex H1 - Price for Evaluation, Item A Known Work, and the cumulative points associated with the spec item where the bidding stops is to be entered into Annex H1 - Price for Evaluation, Item F CUMULATIVE POINTS.

Procedures for Completing Annex H, Appendix 1:

Annex H Appendix 1 is information that will form part of Annex B of the resulting Contract. Bidders are requested to enter into Appendix 1 the same data that was entered into Appendix 2. This information should be completed and submitted with the bid, but may be submitted afterwards. If it is not completed and submitted as requested, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

In the event of any conflict between the contents of the two Appendices, Annex 2 prevails.

Evaluation Procedures for Equivalent Products:

Evaluation Procedures for Equivalent Products - Excepting Annex A Specification 19 Products:

(a) This bid solicitation includes requirements to propose equipment that has been specified by brand name, model and/or part number in order to ensure compatibility, interoperability and interchangeability with existing equipment owned by Canada. With the exception of those products described or listed in Annex A, Specification 19, the following procedures apply.

(b) Products that are equivalent in form, fit, function and quality that are fully compatible, interchangeable, and interoperable with the existing equipment owned by Canada will be considered where the Bidder:

- (i) clearly designates in its bid the brand name, model and/or part number of the proposed equivalent product;

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(ii) demonstrates that the proposed equivalent is fully compatible, interoperates with and is interchangeable with the item(s) specified in this bid solicitation;

(iii) provides complete specifications and descriptive technical documentation for each equivalent item proposed;

(iv) substantiates the compliance of its proposed equivalent by demonstrating that it meets all mandatory performance criteria that are specified in this bid solicitation; and

(v) clearly identifies those areas in the specifications and descriptive technical documentation that demonstrate the equivalence of the proposed equivalent product.

(c) If requested during evaluation, the Bidder must submit a sample of any proposed equivalent product to the Contracting Authority for testing.

(d) If requested during evaluation, the Bidder must provide a demonstration of its proposed equivalent product.

(e) Proposed equivalent products will be declared non-responsive if:

(i) the bid fails to provide all the information required to allow the Contracting Authority to evaluate the equivalency of the proposed equivalent, including additional information requested by the Contracting Authority during the evaluation to supplement the information submitted in the bid (Note: it is the responsibility of the Bidder to include all information required to evaluate equivalency as described above; however, all bidders acknowledge that Canada will have the right, but not the obligation, to request any additional information during the evaluation that it requires to make a determination regarding equivalency);

(ii) the Contracting Authority determines that the proposed equivalent fails to meet or exceed the mandatory requirements specified in this bid solicitation; or

(iii) the Contracting Authority determines that the proposed equivalent is not equivalent in form, fit, function or quality to the item(s) specified in this bid solicitation or that the proposed equivalent is not fully compatible, interoperable and interchangeable with the existing equipment owned by Canada.

Section II - Financial Bid

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

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

4.1.1 Evaluation of Price

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

4.2 Basis of Selection

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price per point as per the formula included in H1 **Price for Evaluation**, Annex H will be recommended for award of a contract.

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

4.3 Deliverables after Contract Award

Refer to Annex "J2".

PART 5 - CERTIFICATIONS

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

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

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

5.1 Certifications Required Precedent to Contract Award

5.1.1 Integrity Provisions - Associated Information

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

5.1.2 Federal Contractors Program for Employment Equity - Bid Certification

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

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

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

The Bidder must provide the Contracting Authority with a completed Annex C, 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.

5.1.3 Education and Experience

The Bidder certifies that all the information provided in the résumés and supporting material submitted with its bid, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Bidder to be true and accurate. Furthermore, the Bidder warrants that every individual proposed by the Bidder for the requirement is capable of performing the Work described in the resulting contract.

Refer to Annex "J1" for Deliverables/Certifications

5.1.4 Status and Availability of Resources

The Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's representatives and at the time specified in the bid solicitation or agreed to with Canada's representatives. If for reasons beyond its control, the Bidder is unable to provide the services of an individual named in its bid, the Bidder may propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder and of his/her availability. Failure to comply with the request may result in the bid being declared non-responsive.

Refer to Annex "J1" for Deliverables/Certifications

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PART 6 - FINANCIAL AND OTHER REQUIREMENTS

6.1 Financial Capability

6.1.1. Financial Capability Requirement:

The Bidder must have the financial capability to fulfill this requirement. To determine the Bidder's financial capability, the Contracting Authority may, by written notice to the Bidder, require the submission of some or all of the financial information detailed below during the evaluation of bids. The Bidder must provide the following information to the Contracting Authority within fifteen (15) Working Days of the request or as specified by the Contracting Authority in the notice:

- a. Audited financial statements, if available, or the unaudited financial statements (prepared by the Bidder's outside accounting firm, if available, or prepared in-house if no external statements have been prepared) for the Bidder's last three fiscal years, or for the years that the Bidder has been in business if this is less than three years (including, as a minimum, the Balance Sheet, the Statement of Retained Earnings, the Income Statement and any notes to the statements).
- b. If the date of the financial statements in (a) above is more than five months before the date of the request for information by the Contracting Authority, the Bidder must also provide, unless this is prohibited by legislation for public companies, the last quarterly financial statements (consisting of a Balance Sheet and a year-to-date Income Statement), as of two months before the date on which the Contracting Authority requests this information.
- c. If the Bidder has not been in business for at least one full fiscal year, the following must be provided:
 - i. the opening Balance Sheet on commencement of business (in the case of a corporation, the date of incorporation); and
 - ii. the last quarterly financial statements (consisting of a Balance Sheet and a year-to-date Income Statement) as of two months before the date on which the Contracting Authority requests this information.
- d. A certification from the Chief Financial Officer or an authorized signing officer of the Bidder that the financial information provided is complete and accurate.
- e. A confirmation letter from all of the financial institution(s) that have provided short-term financing to the Bidder outlining the total of lines of credit granted to the Bidder and the amount of credit that remains available and not drawn upon as of one month prior to the date on which the Contracting Authority requests this information.
- f. A detailed monthly Cash Flow Statement covering all the Bidder's activities (including the requirement) for the first two years of the requirement that is the subject of the bid solicitation, unless this is prohibited by legislation. This statement must detail the Bidder's major sources and amounts of cash and the major items of cash expenditures on a monthly basis, for all the Bidder's activities. All assumptions made should be explained as well as details of how cash shortfalls will be financed.
- g. A detailed monthly Project Cash Flow Statement covering the first two years of the requirement that is the subject of the bid solicitation, unless this is prohibited by legislation. This statement must detail the Bidder's major sources and amounts of cash and the major items of cash

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expenditures, for the requirement, on a monthly basis. All assumptions made should be explained as well as details of how cash shortfalls will be financed.

6.1.2. If the Bidder is a joint venture, the financial information required by the Contracting Authority must be provided by each member of the joint venture.

6.1.3. If the Bidder is a subsidiary of another company, then any financial information in 1. (a) to (f) above required by the Contracting Authority must be provided by the ultimate parent company. Provision of parent company financial information does not by itself satisfy the requirement for the provision of the financial information of the Bidder, and the financial capability of a parent cannot be substituted for the financial capability of the Bidder itself unless an agreement by the parent company to sign a Parental Guarantee, as drawn up by Public Works and Government Services Canada (PWGSC), is provided with the required information.

6.1.4. Financial Information Already Provided to PWGSC:

The Bidder is not required to resubmit any financial information requested by the Contracting Authority that is already on file at PWGSC with the Contract Cost Analysis, Audit and Policy Directorate of the Policy, Risk, Integrity and Strategic Management Sector, provided that within the above-noted time frame:

a. the Bidder identifies to the Contracting Authority in writing the specific information that is on file and the requirement for which this information was provided; and

b. the Bidder authorizes the use of the information for this requirement.
It is the Bidder's responsibility to confirm with the Contracting Authority that this information is still on file with PWGSC.

6.1.5. Other Information:

Canada reserves the right to request from the Bidder any other information that Canada requires to conduct a complete financial capability assessment of the Bidder.

6.1.6. Confidentiality:

If the Bidder provides the information required above to Canada in confidence while indicating that the disclosed information is confidential, then Canada will treat the information in a confidential manner as permitted by the Access to Information Act, R.S., 1985, c. A-1, Section 20(1) (b) and (c).

6.1.7. Security:

In determining the Bidder's financial capability to fulfill this requirement, Canada may consider any security the Bidder is capable of providing, at the Bidder's sole expense (for example, an irrevocable letter of credit from a registered financial institution drawn in favour of Canada, a performance guarantee from a third party or some other form of security, as determined by Canada).

6.2 Contract Financial Security

6.2.1 In the bid, the Bidder must indicate the following in Annex H "Financial Bid Presentation Sheet":

a) the type of Contract Financial Security the Bidder intends to provide if awarded the Contract; and

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b) the cost to the Bidder of the Contract Financial Security.

Refer to Annex "J1" for Deliverables/Certifications

6.2.2 If this bid is accepted, the Bidder shall be required to provide the Contract Financial Security in accordance with 7.12 within **(5) five Working Days** after the date of contract award.

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

6.3 Vessel Transfer Costs

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

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

(a) The Bidder must provide the location of the shipyard/ship repair facility where it proposes to perform the Work together with the applicable vessel transfer cost from the list provided under paragraph 2 of this clause shall be entered into Table H1 (D):

(b) If the list in paragraph 2 of this clause does not provide the shipyard/ship repair location where the Bidder intends to perform the Work, then the Bidder must advise the Contracting Authority, in writing, at least **10 calendar days** before the bid closing date, of its proposed location for performing the Work. The Contracting Authority will confirm to the Bidder, in writing, at least **5 calendar days** before the bid closing date, the location of the shipyard/ship repair and the applicable vessel transfer cost.

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

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

Vessel: CCGS Sipu Muin
Home Port: Trois-Rivières, QC

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

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(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

Proposed Drydocking Location : _____

Refer to Annex "J1" for Deliverables/Certifications.

6.4 Docking Facility

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

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

This vessel has limited ability to navigate open ocean. It has been determined that the risks to personnel and equipment associated with the extended open sea transits are high. As a result, the transfer costs below are seen as accurate. Locations outside of those identified should contact Contract authority to determine transfer costs.

Unmanned only: CCGS Sipu Muin

Company	City/Province	Unmanned Transfer Cost
Aecon Atlantic Industrial	Pictou, NS	\$8,247
Caraquet Marine Industry Ltd.	Caraquet, NB	\$9,626
Oceans Industries Inc.	Saint-Bernard-Sur-Mer, QC	\$2,369
Chantier Forillon	Gaspé, QC	\$14,689
Chantier Matane	Matane, QC	\$4,448
Davie Industries Inc.	Levis, QC	\$1,404
Heddle Marine	Hamilton, ON	\$7,181
Hike Metal Products Ltd	Wheatley, ON	\$11,990
MetalCraft Marine Inc.	Kingston, ON	\$15,703
Verreault Navigation Inc.	Les Mechins, QC	\$7,968

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.

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6.5 Workers' Compensation - Letter of Good Standing

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

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

Refer to Annex "J1" for Deliverables/Certifications.

6.6 Valid Labour Agreement

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

Refer to Annex "J1" for Deliverables/Certifications

6.7 Preliminary Work Schedule

6.7.1 At the time of bid closing the Bidder must submit to Canada one (1) copy of a preliminary work schedule in Gantt chart format. This schedule must highlight the target dates listed at 6.7.2 below and all priced work items listed in Annex H. For purposes of the schedule the Contractor will assume Vessel Docking on July 2, 2015.

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

- a. Commencement of Work as defined at Article 7.3.1
- b. Period to be in Dry-Dock
- c. All priced work items listed in Annex H Appendix 2
- d. FSR Scheduling for Priced Work Items
- e. Completion of Work as defined at Article 7.3.1
- f. Dock and Sea Trials Period
- g. Resumption of custody by Canada

Refer to Annex "J1", Deliverables/Certifications.

6.8 Safety Measures for Fueling and Disembarking Fuel

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

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

Refer to Annex "J1", Deliverables/Certifications.

6.9 ISO 9001:2008 - Quality Management Systems

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

- If registered its valid ISO 9001-2008 certification;
- Example of Quality Control Plan (QCP) as per clause 6.17.

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

Refer to Annex "J1" for Deliverables/Certifications.

6.10 Health and Safety

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

Refer to Annex "J1" for Deliverable Requirements.

6.11 Fire Protection, Fire Fighting and Training Procedures

The Bidder must submit with its bid objective evidence that it has documented fire protection, fire fighting and training procedures compliant with current regulations and their insurance requirements. The fire protection, fire fighting and training procedures will, once accepted by Canada, form part of the Contract. Please refer to clause 7.25. If this information is not provided with the bid it will render the bid non-responsive.

Refer to Annex "J1" for Deliverable Requirements.

6.12 Hazardous Waste

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

6.13 Insurance Requirements

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

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Refer to Annex "J1", Deliverables/Certifications.

6.14 Welding Certification

- 6.4.1** For any item requiring the application of fusion welding for steel structures, the Contractor or his Sub-Contractors must be certified in accordance with the Canadian Welding Bureau, CSA/ACNOR W47.1; Division 2.1 certification – latest revision.
- 6.4.2** For any item requiring the application of fusion welding for stainless steel structures, the Contractor or his Sub-Contractors must be certified in accordance with the Canadian Welding Bureau, CSA/ACNOR AWS; Division 16 certification – latest revision.
- 6.4.3** For any item requiring the application of fusion welding to aluminum structures, the Contractor or his Sub-Contractors must be certified in accordance with the Canadian Welding Bureau, CSA/ACNOR W47.2-11.
- 6.4.4** The Contractor must provide documentation to the TA clearly identifying the welding certification of all employees performing any welding included in this specification.
- 6.4.5** All new welds shall be inspected using dye penetrant and ultrasonic testing (UT) to current industry standards for marine construction by a NDT inspector certified to level 2 or higher for the NDT methods used.

Refer to Annex "J1" for Deliverables/Certifications.

6.15 Project Management Services

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

1. Intent

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

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

2. Project Manager

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

(b) The PM must have at least two years experience within the last five years in managing a marine project.

3. Project Management Team

Other than the Project Manager, the Contractor may assign and deploy personnel to suit its organization; provided however that the collective resume of its Project Management Team provide for the effective control of the project elements including but not limited to:

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-
- i. Engineering
 - ii. Manufacturing
 - iii. Quality Assurance
 - iv. Planning and Scheduling
 - v. Test and Trials
 - vi. Purchasing

4. Tender Deliverable

Names, brief resumes, and list of duties for each of the team members that ensures that each of the project elements listed in Article 2 and 3i through 3vi inclusive have been addressed.

Refer to Annex "J1" for Deliverables/Certifications.

6.16 List of Proposed Subcontractors

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

Refer to Annex "J1" for Deliverables/Certifications.

6.17 Quality Control Plan

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

Refer to Annex "J1" for Deliverables/Certifications.

6.18 Inspection and Test Plan

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

Refer to Annex "J1" for Deliverables/Certifications.

6.19 Environmental Protection

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

Refer to Annex "J1" for Deliverables/Certifications.

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PART 7 - RESULTING CONTRACT CLAUSES

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

7.1 Requirement

The Contractor must:

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

7.2 Definitions:

In this Contract, unless the context otherwise requires:

'CCGS' – means Canadian Coast Guard Ship

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

'DFO' – means Department of Fisheries and Oceans Canada

Dollar, "Dollars", or "\$" - means the legal tender of Canada;

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

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

'OEM' - means original equipment manufacturer;

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

'Owners Representative' – means the Technical Authority of the Sipu Muin or his/her designate.

'PWGSC' – means Public Works and Government Services Canada;

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

Capitalized terms not otherwise defined in these Articles of Agreement numbered 1 through 49 inclusive and defined in the General Conditions or Supplemental Conditions referred to at Section 7.2 will have meanings given to them in those Annexes.

7.3 Standard Clauses and Conditions

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

7.3.1 General Conditions

2030 (2015-09-03), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

2030 (2015-09-03) General Conditions Higher Complexity - Goods are hereby amended as follows:

Section 22 Warranty

1. The Contractor, if requested by Canada, must replace or repair at its own expense any finished work, excluding Government Issue incorporated in the Work, which becomes defective or which fails to conform to contract requirements as a result of faulty or inefficient manufacture, material or workmanship.
2. Despite acceptance of the finished work, and without restricting any other term of the Contract or any condition, warranty or provision imposed by law, the Contractor warrants that the following will be free from all defects and will conform with the requirements of the Contract:
 - (a) The painting of the underwater portion of the hull for a period of 365 days commencing from the date of undocking, except that the Contractor will only be liable to repair and/or replace to a value to be determined as follows:

Original cost to Canada of the underwater painting work, divided by 365 days and multiplied by the number of days remaining in the warranty period. The resultant sum would represent the "Dollar Credit" due to Canada from the Contractor.
 - (b) All other painting work for a period of 365 days commencing from the date of acceptance of the Work;
 - (c) All other items of work for a period of ninety (90) days commencing from the date of acceptance of the Work, except that:

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- (i) the warranty on the work related to any system or equipment not immediately placed in continuous use or service will be for a period of ninety (90) days from the date of acceptance of the vessel;
 - (ii) for all outstanding defects, deviations, and work items listed on the Acceptance Document at Delivery, the warranty will be ninety (90) days from the subsequent date of acceptance for each item.
3. The Contractor agrees to pass to Canada, and exercise on behalf of Canada, all warranties on the materials supplied or held by the Contractor which exceed the periods indicated above.
4. Refer to Annex "E" and its Appendix "1" for Warranty Defect Claim Procedures and forms.

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

7.3.2 Supplemental General Conditions

1029 (2010-08-16) Ship Repairs;
4001 (2013-01-28) Hardware Purchase, Lease and Maintenance;
4003 (2010-08-16) Licensed Software;

7.4 Term of Contract

7.4.1 Work Period - Marine

1. Work must commence and be completed as follows:

Commence: May 10, 2016
Complete: Nov. 15, 2016

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

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

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

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

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

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

7.4.2 Additional Instructions to Work Period

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

7.5 Authorities

7.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Chris Moore
Department of Public Works and Government Services Canada (PWGSC)
Defence and Major Projects Sector
PWGSC, 6C2 Place du Portage, Phase III
11 Laurier Street,
Gatineau, Quebec, K1A 0S5
Tel: (819) 956-1581
Fax: (819) 956-7725
E-Mail - chris.moore@pwgsc.gc.ca

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

7.5.2 Technical Authority

The Technical Authority for the Contract is:

Jean-Luc Arsenault
VLE/MLM Class Manager (Pacific Region)
Fisheries and Oceans Canada / Pêches et Océans Canada
Canadian Coast Guard / Garde côtière canadienne
Phone / Téléphone: 250-363-6976
Cell / 250-217-2539
Fax: / Télécopieur: 250-363-6724
Email / C. élec: Jean-Luc.Arsenault@dfo-mpo.gc.ca

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

7.5.3 Inspection Authority

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

Name will be determined at Contract Award

Name: TBD
Telephone:
Cell:
Fax:

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E-mail:

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

7.6 Payment

7.6.1 Basis of Payment - Firm Price

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price indicated in the Basis of Payment Annex "B" for the Known Work. Applicable Taxes are extra, if applicable. Payment for unscheduled work shall be in accordance with Annex "B".

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

7.6.2 Method of Payment - Progress Payment

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

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7.6.3 Liens - Section 427 of the Bank Act

1. If any lien under section 427 of the Bank Act, S.C. 1991, c. 46, exists in respect to any materials, parts, work-in-process, or finished work for which the Contractor intends to claim payment, the Contractor agrees to inform the Contracting Authority without delay and agrees, unless instructed otherwise by the Contracting Authority, either:
 - a. to cause the bank to remove such lien and to provide the Contracting Authority with written confirmation from the bank; or,
 - b. to provide to the Contracting Authority an undertaking from the bank that the bank will not make any claim under section 427 of the Bank Act on materials, parts, work-in-process, or finished work in respect of which payment is made to the Contractor under the Contract.
2. Failure to inform the Contracting Authority of such lien or failure to implement paragraph 1 (a) or (b) above will constitute default under the default section of the general conditions and will entitle Canada to terminate the Contract.

7.6.4 Limitation of Price

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.

7.6.5 Time Verification

Time charged and the accuracy of the Contractor's time recording system are subject to verification by Canada, before or after payment is made to the Contractor. If verification is done after payment, the Contractor must repay any overpayment, at Canada's request.

7.7 Invoicing Instructions

The Contractor must submit invoices in accordance with the information required in Section 13 of 2030 (2015-09-03), General Conditions, Higher Complexity, Goods and Article 7.5 Payment and Article 7.6 Invoicing Instructions.

7.7.1 Invoices

1. Invoices are to be made out to:

CCGS ITS Marine Engineering VLE
200 Kent Street-Stn 7N-157
Ottawa, Ontario
K1A 0E6
Attention: Kim Green

And

The original invoice to be forwarded for verification to:

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

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

7.7.2 Invoicing Instructions - Progress Claim

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

Each claim must show:

- (a) all information required on form PWGSC-TPSGC 1111;
 - (b) all applicable information detailed under section 13. of the general conditions entitled "Invoice Submission";
2. Applicable Taxes must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no Applicable Taxes payable as it was claimed and payable under the previous claims for progress payments.
 3. The Contractor must prepare and certify one original and two (2) copies of the claim on form PWGSC-TPSGC 1111, and forward it to the Contracting Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

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

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

7.7.3 Warranty Holdback

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

7.8 Certifications

7.8.1 Compliance

Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with

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any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

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

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

7.10 Applicable Laws

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

7.11 Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the Supplemental General Conditions 1029, (2010-08-16), Ship Repairs;
- (c) the General Conditions 2030, (2015-09-03), General Conditions - Higher Complexity - Goods
- (d) the General Conditions 1031-2, (2008-05-12), Contract Cost Principles;
- (e) 4001 (2013-01-28) Hardware Purchase, Lease and Maintenance;
- (f) 4003 (2010-08-16) Licensed Software;
- (g) Annex "A", Statement of Work;
- (h) Annex "B", Basis of Payment;
- (i) Annex "C", Federal Contractors Program for Employment Equity - Certification;
- (j) Annex "D", Insurance Requirements;
- (k) Annex "E", Warranty;
- (l) Annex "F", Procedure for Unscheduled Work;
- (m) Annex "G", Quality Control/Inspection;
- (n) Annex "H", Financial Bid Presentation Sheet;
- (o) Annex "I", Vessel Turnover;
- (p) Annex "J", Deliverables/Certifications;
- (r) the Contractor's bid dated _____ (insert date of bid), as amended _____ (insert date(s) of amendment(s) if applicable)

7.12 Insurance Requirements

The Contractor must comply with the insurance requirements specified in Annex "D". The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.

The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfil 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.

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

7.13 Limitation of Contractor's Liability for Damages to Canada

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

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

(a) Any infringement of intellectual property rights;

(b) Any breach of warranty obligations;

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

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

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

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

5. If, at any time, the total cumulative liability of the Contractor for losses or damage suffered by Canada caused by the Contractor's performance of or failure to perform the Contract, excluding liability described under subsection 2(a), (b), (c) and (d) exceeds \$40 million, either Party may terminate the Contract by giving notice in writing to the other Party and neither Party will make any claim against the other for damages, costs, expected profits or any other such loss arising out of the termination. However, no such termination or expiry of the Contract shall reduce or terminate any of the liabilities that have accrued to the effective date of the termination but which liabilities are subject to the limitations as specified in sub-article (1) through (4) above.

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

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

7.13.1 Environmental Impairment Liability Insurance

1. The Contractor must obtain Contractor's Pollution Liability insurance, providing coverage for Asbestos Abatement, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$5,000,000 per accident or occurrence and in the annual aggregate.

2. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.

3. The Contractor's Pollution Liability insurance coverage provided under the remarks section above) policy must include the following:

- a. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.
- b. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
- c. Separation of Insureds: The policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
- d. Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
- e. Incidental Transit Extension: The policy must extend to losses arising from any waste, products or materials transported, shipped, or delivered via any transportation mode to a location beyond the boundaries of a site at which the Contractor or any entity for which
- f. the Contractor is legally liable is performing or has performed the operations described in the contract.
- g. Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:
Director Business Law Directorate,

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

For other provinces and territories, send to:

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

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

7.14 Financial Security

7.14.1 Term of Financial Security

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

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

7.14.2 Contract Financial Security

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

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

OR

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

Any bond must be accepted as security by one of the bonding companies listed in Treasury Board Contracting Policy, Appendix L, Acceptable Bonding Companies (<http://www.tbs-sct.gc.ca/pol/doc->

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eng.aspx?id=12027). The bond forms mentioned in (a) above are available at: <http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>.

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

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

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

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

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

6. When Canada so converts the security deposit:

- (a) the proceeds will be used by Canada to complete the Work according to the conditions of the Contract, to the nearest extent that it is feasible to do so and any balance left will be returned to the Contractor on completion of the warranty period; and
- (b) if Canada enters into a contract to have the Work completed, the Contractor will:
 - (i) be considered to have irrevocably abandoned the Work; and
 - (ii) remain liable for the excess cost of completing the Work if the amount of the security deposit is not sufficient for such purpose. "Excess cost" means any amount over and above the amount of the Contract Price remaining unpaid together with the amount of the security deposit.

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

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

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9. In this Article:

"Security deposit" means

- (a) a bill of exchange that is payable to the Receiver General for Canada and certified by an approved financial institution or drawn by an approved financial institution on itself; or
- (b) a government guaranteed bond; or
- (c) an irrevocable standby letter of credit, or
- (d) such other security as may be considered appropriate by the Contracting Authority and approved by Treasury Board;

"Approved financial institution" means

- (a) any corporation or institution that is a member of the Canadian Payments Association;
- (b) a corporation that accepts deposits that are insured by the Canada Deposit Insurance Corporation or the Régie de l'assurance-dépôts du Québec to the maximum permitted by law;
- (c) a credit union as defined in paragraph 137(6) of the Income Tax Act;
- (d) a corporation that accepts deposits from the public, if repayment of the deposits is guaranteed by a Canadian province or territory;
- (e) the Canada Post Corporation.

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

- (a) payable to bearer;
- (b) accompanied by a duly executed instrument of transfer of the bond to the Receiver General for Canada in accordance with the Domestic Bonds of Canada Regulations;
- (c) registered in the name of the Receiver General for Canada.

"Irrevocable standby letter of credit"

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

- (i) will make a payment to or to the order of Canada, as the beneficiary;
- (ii) will accept and pay bills of exchange drawn by Canada;
- (iii) authorizes another financial institution to effect such payment, or accept and pay such bills of exchange; or
- (iv) authorizes another financial institution to negotiate, against written demand(s) for payment, provided that the conditions of the letter of credit are complied with.

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- (b) must state the face amount which may be drawn against it;
- (c) must state its expiry date;
- (d) must provide for sight payment to the Receiver General for Canada by way of the financial institution's draft against presentation of a written demand for payment signed by the authorized departmental representative identified in the letter of credit by his/her office;
- (e) must provide that more than one written demand for payment may be presented subject to the sum of those demands not exceeding the face amount of the letter of credit;
- (f) must provide that it is subject to the International Chamber of Commerce (ICC) Uniform Customs and Practice (UCP) for Documentary Credits, 2007 Revision, ICC Publication No. 600. Pursuant to the ICC UCP, a credit is irrevocable even if there is no indication to that effect; and
- (g) must be issued (Issuer) or confirmed (Confirmer), in either official language, by a financial institution that is a member of the Canadian Payments Association and is on the letterhead of the Issuer or Confirmer. The format is left to the discretion of the Issuer or Confirmer.

7.15 Foreign Nationals (Canadian Contractor)

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

7.16 Sub-contracts and Sub-contractor List

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

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

7.17 Work Schedule and Reports

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

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

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

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7.18 Insulation Materials - Asbestos Free

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

7.19 Trade Qualifications

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

7.20 ISO 9001:2008 - Quality Management Systems

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

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

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

7.21 Project Management Services

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

Introduction

Project management refers to system integration and technical control as well as business management of the CCGS Sipu Muin Mid-Life Modernization Refit Project.

The Contractor must provide the following within 15 days of Contract Award:

Project Action Plan (PAP):

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

The PAP must comprise:

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

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

1) Project Integration Management:

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

2) Change Management Log:

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

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

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

3) Risk Management Plan:

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

4) Scheduling:

The Contractor must provide a schedule(s) that breaks the work down to the system and component level. The schedule must include sub-Contractor schedules to the same level. The Contractor must update the schedule(s) on a monthly basis and the updates must be provided to the Contract Authority, the Inspection Authority and the Technical Authority.

The schedule(s) must identify all work in the project. It must include long lead items, GFE, strip outs, production, assembly, installation, bench testing, system commissioning and tests and trials, as well as all scheduled and required resources.

The schedule(s) must identify the major milestones, critical path and all interrelationships between tasks. The schedule(s) must be baselined.

5) Project Reporting:

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

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

i. Production Work Schedule

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- ii Inspection Summary Report
- lii. Growth Work Summary

7.22 Quality Control Plan

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

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

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

Refer to Annex "G" for details.

7.23 Inspection and Test Plan

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

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

Refer to Annex "G" for details.

7.24 Equipment/Systems: Inspection/Test

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

Refer to Annex "G" for details.

7.25 Environmental Protection

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

The Contractor must have detailed procedures and processes for identifying, removing, tracking, storing, transporting and disposing of all potential pollutants and hazardous material encountered, to ensure

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compliance as required above. The contractor must maintain in force their Environmental Protection procedures through the course of the contract.

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

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

7.26 Hazardous Waste

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

7.27 Supervision of Fueling and Disembarking Fuel

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

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

7.28 Fire Protection, Fire Fighting and Training

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

7.29 Loan of Equipment - Marine

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

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

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

Refer to Annex "J2" for Deliverables/Certifications.

7.30 Welding Certification

1. For any item requiring the application of fusion welding for steel structures, the Contractor or his Sub-Contractors must be certified in accordance with the Canadian Welding Bureau, CSA/ACNOR W47.1; Division 2.1 certification – latest revision.
2. For any item requiring the application of fusion welding for stainless steel structures, the Contractor or his Sub-Contractors must be certified in accordance with the Canadian Welding Bureau, CSA/ACNOR AWS; Division 16 certification – latest revision.
3. For any item requiring the application of fusion welding to aluminum structures, the Contractor or his Sub-Contractors must be certified in accordance with the Canadian Welding Bureau, CSA/ACNOR W47.2-11.
4. The Contractor must provide documentation to the TA clearly identifying the welding certification of all employees performing any welding included in this specification.
5. All new welds shall be inspected using dye penetrant and ultrasonic testing (UT) to current industry standards for marine construction by a NDT inspector certified to level 2 or higher for the NDT methods used.

7.31 Procedures for Design Change or Additional Work

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

1. When Canada requests design change or additional work:
 - a. The Technical Authority will provide the Contracting Authority with a description of the design change or additional work in sufficient detail to allow the Contractor to provide the following information:
 - i. any impact of the design change or additional work on the requirement of the Contract;
 - ii. a price breakdown of the cost (increase or decrease) associated with the implementation of the design change or the performance of the additional work using either the form PWGSC-TPSGC 1686, Quotation for Design Change or Additional Work, or the form PWGSC-TPSGC 1379 (PDF 56KB) - (Help on File Formats) Work Arising or New Work.

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- iii. a schedule to implement the design change or to perform the additional work and the impact on the contract delivery schedule.
- b. The Contracting Authority will then forward this information to the Contractor.
- c. The Contractor will return the completed form to the Contracting Authority for evaluation and negotiation. Once agreement has been reached, the form must be signed by all parties in the appropriate signature blocks. This constitutes the written authorization for the Contractor to proceed with the work, and the Contract will be amended accordingly.
2. When the Contractor requests design change or additional work:
- a. The Contractor must provide the Contracting Authority with a request for design change or additional work in sufficient detail for review by Canada.
- b. The Contracting Authority will forward the request to the Technical Authority for review.
- c. If Canada agrees that a design change or additional work is required, then the procedures detailed in paragraph 1 are to be followed.
- d. The Contracting Authority will inform the Contractor in writing if Canada determines that the design change or additional work is not required.
3. Approval - The Contractor must not proceed with any design change or additional work without the written authorization of the Contracting Authority. Any work performed without the Contracting Authority's written authorization will be considered outside the scope of the Contract and no payment will be made for such work. SACC Manual Clause B5007C (2010-01-11) Procedures for Design Change or Additional Work

In addition, refer to Annex "F".

7.32 Vessel Unmanned Refits

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

Refer to Annex "K" for details.

7.33 Pre-Refit Meeting

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

7.34 Progress Meetings

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

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

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

- (a) Ensure that Contractor data, personnel and facilities are available for each formal meeting in order that the meetings may be conducted in an efficient manner; and
- (b) Include the following agenda items for discussion and resolution:
 - i. PAP and updates;
 - ii. Contractual Issues;
 - iii. Financial Issues;
 - iv. Technical Issues;
 - v. Environmental, Health and Safety Issues; and
 - vi. Previous action items.

7.35 Outstanding Work and Acceptance

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

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

7.36 Scrap and Waste Material

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

7.37 Stability

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

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7.38 Vessel Access by Canada

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

7.39 Title to Property - Vessel

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

7.40 Workers Compensation

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

7.41 Dispute Resolution

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

(a) Disputes arising from this Contract will in the first instance be resolved by the Contracting Authority and the Contractor's Contract Administrator within 15 Working Days or such additional time as may be agreed to by both parties.

(b) Failing resolution under (a) above, the Manager of the Ship Refit Division (MD) of the Marine Systems Directorate at PWGSC and the Contractor's Representative Supervisor will attempt to resolve the dispute within an additional fifteen (15) Working Days.

(c) Failing resolution under (a) or (b) above, the Senior Director of the Marine Systems Directorate at PWGSC, and the Contractor's Senior Management will attempt to resolve the dispute within an additional thirty (30) Working Days.

(d) Notwithstanding the above procedure, either party may seek a decision through the courts at any time during the dispute.

7.42 Failure to Deliver

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

7.43 Care, Custody and Control

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

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

7.44 Permits, Licenses and Certificates

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

7.45 Export Licenses:

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

7.46 Travel and Living Expenses - National Joint Council Travel Directive

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

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

All payments are subject to government audit.

7.47 Equivalency of Equipment

- (a) The Contractor guarantees that the equipment to be delivered under the Contract is:
- (i) equivalent in form, fit, function and quality to the existing equipment owned by Canada that was described in the bid solicitation that resulted in the Contract; and
 - (ii) fully compatible, interchangeable and interoperable with the existing equipment owned by Canada.
- (c) The Contractor also guarantees that any warranties with third parties concerning the existing equipment owned by Canada will not be adversely affected by Canada's use of the equipment delivered under the Contract (for example, by interconnecting the equipment) or by any other services provided by the Contractor under the Contract. If Canada determines in its sole discretion that any such warranty has been adversely affected, at Canada's sole option, the Contractor must:
- (i) pay to Canada the amount that Canada must pay to the original supplier (or an authorized reseller of that supplier) to re-certify Canada's existing equipment for warranty purposes and any other amounts paid by Canada to a third party in order to restore the equipment to full warranty status;

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

7.48 Government Supplied Material

Government Supplied Material (GSM) is the property of the Government of Canada. The Contractor is responsible for maintaining satisfactory records of the disposition of all GSM. The GSM described herein must be used in the manufacture of the item(s) contracted. Only the quantity of material stated herein will be supplied by Canada without charge. If GSM does not conform to requirements for incorporation into the Work, the Contractor shall make a request for replacement GSM in writing to Canada within 30 days after the receipt of GSM. At Canada's instruction, the Contractor shall replace or repair any GSM, at the prices and In Accordance with Contract provisions relating to Unscheduled Work. The Contractor shall replace or make good, at its own expense, any GSM which fail to conform to the Contract requirements as a result of faulty or inefficient cutting, manufacture or workmanship by the Contractor.

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

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

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

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

Parts from Griffon Hoverworks

<u>Line</u>	<u>Item Code</u>	<u>Description</u>	<u>Quantity</u>
2	WAP1-88-B-4021	STABILITY TRUNK (BAG) PORT	1
3	WAP1-88-B-4022	STABILITY TRUNK STBD	1
4	WAP1-88-B-4057	KEEL	1

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5	WAP1-88-B-4019	REAR TRUNK	1
6	WAP1-88-B-4037	PORT OUTER TRUNK SIDE **WITH FINGERS ATTACHED**	1
7	WAP1-88-B-4038	STBD OUTER TRUNK SIDE **WITH FINGERS ATTACHED**	1
8		Bow sect - Bow section Outer Trunk (with fingers attached)	1
9	WAP1-88-B-4091	PORT OUTER TRUNK AFT**WITH FINGERS/ SPECIAL FINGERS/CONES ATTACHED**	1
10	WAP1-88-B-4092	STBD OUTER TRUNK AFT**WITH FINGERS/ SPECIAL FINGERS/ CONES ATTACHED.	1
11	HTWAP1-88-B-4613/A	SPRAY SUPPRESSOR BOW	1
12	HTWAP1-88-B-4613/B	SPRAY SUPPRESSOR BOW SIDE	2
13	HTWAP1-88-B-4613/C	SPRAY SUPPRESSOR FWD SIDE	2
14	HTWAP1-88-B-4613/D	SPRAY SUPPRESSOR - AFT SIDE	2
15	B401103C1	NYLON CONE PLATE DOUBLE	180
16	B401101B1	WASHER PLATE	180
17	WAP1-88-H-4161	LANDING PAD (REQUIRE PAINT LAG)	4
18		Debris Guard WAP1-88-H-4075.	4
19		WAP1-88-H-4161/C Bonding Strap.	4
20	B401103G1	NYLON WASHER SINGLE SQUARE	200
21	B401101AV1	BUSH HINGE STRUCTURE	250
22	B401101AA1	BUSH NYLON CRAFT	1000
23	B401101AC1	HINGE (SINGLE) FULL CRAFT	6
24	B401101AG1	HINGE DOUBLE STRUCTURE (MTRS)	10
25	HTWAP1-88-68-4091	TRANSMISSION FRAME - PORT	1
26	HTWAP1-88-68-4092	TRANSMISSION FRAME - STBD	1
27	HTWAP1-88-05-4411/1	Bracket Assemblies	4
28	5083-0-M-S-2.0 5083-0-Sheet-	02.0 x 2500 x 1250	18
29	5083-0-M-S-2.5 5083-0-Sheet-	02.5 x 2500 x 1250 (27240)	12
30	5083-0-M-S-3.0 5083-0-Sheet-	03.0 x 2500 x 1250	8
31	5083-0-M-S-4.0 5083-0-Sheet-	04.0 x 2500 x 1250	1
32	5083-0-M-S-5.0 5083-0-Sheet-	05.0 x 2500 x 1250 (27243)	9
33	5083-0-M-S-8.0 5083-0-Sheet-	08.0 x 2500 x 1250 (27471)	2
35	6082/2X2X1/8TEE	ALUMINIUM TEE 2X2X1/8 (2.4 Mtr Length)	10
36		Flat Bar 38 x 2.5 mm 5083-0-M-F -38.0-2.5 2.4m length	4
37	6082-T6-M-F-40.0-03.0	6082-T6 Flat Bar 40.0 mm x 3.0 mm (28018) (2.4 Mtr)	8
38	5083-0-M-F-40.0-4.0	5083-0-Flat bar 40mm x 4mm (2.4 Mtr)	2
39	5083-0-M-WHS-50.0-50	5083-0-M-Welsh Hat Stiffener Cut to size 50mm x 50mm x 2mm (1200mm long)	80
40	5083-0-M-A-43.0-43.	5083-0-Angle 43mm x 43mm x 4mm 0-4.0	9
41	5083-0-M-A-50.0-25.	5083-0-Angle 50mm x 25mm x 2mm 0-2.0	10
42	6082-T6-I-U-3.000-1.	6082-T6-Channel-3.000"x1.500"x 0.250" (27952) Qty in metres	6
43	6082-T6-I-B-3.000	6082-T6-Box-3.000"x2.000"x0.125" (27383)(2.5 metre lengths)	6
44	6082-T6-I-I-3.000-	6082-T6-I-Beam- 3.000" x 1.500" x 0.1875" x 0.250" (27456)	3
45	1.500-0.1875	Tube 76.2X2.64is not available	2

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46	6082-T6-I-P-3.000-0.128	quoted 76.2 x 3.25 instead. 6082-T6-Pipe-3.000"x0.128"(27332)	6
47	6082-T6-I-P-1.000-0.128	Qty in metres 6082-T6-Pipe-1.000"x0.128"(27289)	4
48	6082-T6-I-B-3.000-1.500 -0.128	qty in metres 6082-T6-BOX- 3" X 1.5" X 0.128" (QTY IN METRES/5M LENGTHS)	2
49	6082-T6-I-B-3.000-2.000 -0.250	6082-T6-Box- 3.000" x 2.000" x 0.250" (28052) Qty in metres	2
50	6082-T6-I-T-2.000-2.000 -0.125	6082-T6-Tee- 2.000" x 2.000" x 0.125" (27451) 4.8m lengths	8
51	6082-T6-I-A-1.500-1.500 -0.125	6082-T6-Angle- 1.500" x 1.500" x 0.125" (27274) 4.8m lengths	3
52	6082-T6-I-B-1.000-1.000 -0.125	6082-T6-Box- 1.000" x 1.000" x 0.125" 3m length	1
53	6082-T6-I-B-3.000-2.000 -0.125	6082-T6-Box- 3.000" x 2.000" x 0.125" (27383) 2.5m lengths	2
54		6082-T6-I-B-3.000-1.500-0.18-HW No.s29 2.4m length	3
55	6082-T6-I-B-4.000-4.000 -0.125	6082-T6-Box- 4.000" x 4.000" x 0.125" 3m length	1
56	6082-T6-I-P-3.000-0.125	6082-T6-Pipe- 3.000" x 0.125" (27332)	1
57	6082-T6-I-P-1.000-0.125	4.8 m length 6082-T6-Pipe-1.000"x0.125"(27289)	2
58	5083-0-M-S-6.0	4.8m length 5083-0-Sheet- 06.0 x 2500 x 1250 (27244)	1
59	MELINEX-0.003	MELINEX 0.003 ISOLATING MATERIAL (1 ROLL)	1

Plastizote Foam – Supplier Norseman Inc.

ZOTEFOAMS LD45FR PLASTIZOTE FOAM				
	L (mm)	W (mm)	Thick (mm)	QTY
1	1900	1200	80	2
2	2370	1200	80	8
3	2370	530	75	6
4	1900	530	75	2

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5	2370	530	50	2
6	1380	650	50	10
7	300	200	50	2
8	2370	1200	40	8
9	1900	1200	40	2
10	1200	530	25	10
11	2370	530	7.5	8
12	1900	530	7.5	2
13	1200	650	5	10

Window Wipers – Supplier Northwest Marine

Item	Description	Qty
WYNN	Wynn Type D Straight Line Wiper HD Twin IPN: D52361075A6A6CSKA1A 24vdc PM3 Motor AWL / stroke 915 case 2270 De Icing Case Heater Included Type D Wiper Arms: DD50R Type D Wiper Blade: 1279-553-700	
WYNN	IPN: 1000-024-110-1 Series 1000 Local Independent Control 24vdc 1 way continuous and 4 variable intermittent settings ranging from 4-30 seconds.	1
HEP	50 Series Pantograph Wiper Assembly Compact 24vdc IER motor, 125mm Liner length variable arc adjustment P615 18TJ - HD Pantograph Wiper Arm S/S Black cw Travel Spray Jet FB 14 - Flate Blade HD 14"	5
HEP	10095303 24V 3 Way 24v multi-function switch complete with panel	5

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WYNN	<p>Wash System Kit –Quantity -1</p> <p>1 X 61L Polyethylene Reservoir c/w Installation fittings kit 1 X Flojet water pump 24vdc, 3.5 gpm, 45psi cut out 1 X Accumulator Tank 2 gallon 8" diameter x 12 5/8" tall all mounting hardware included. 1 X Pressure Check Valve 1 X Brass Tee (1 way to forward wiper / 1 way to pantograph wipers) 1 X 5 Way Aluminum Manifold for 5 Pantograph Wipers c/w fittings 5 X Solenoid Valves 24vdc 1/4" NPT, Brass Body, 2 way normally closed for Pantograph wipers c/w connection fittings 1X Solenoid Valve 24vdc 1/2" NPT, Brass Body, 2 way normally closed for Straightline wiper c/w connection fittings 30 meters 5/16" rigid tubing for pantograph wipers 5 X Stainless Steel Bulkhead Connectors fit for 1/4" Bulkhead Thickness - Pantograph Wipers 50 ' Industrial Water Hose 1/2" ID -40 degrees to 100 degrees temp rating Black 10" Industrial Water Hose 3/8" ID -40 degrees to 100 degrees temp rating Black 1X Bulkhead Coupler and 1/2" and 3/8" Hose Barbs for Straightline Wiper All S/S hose clamps, clips, and fittings included.</p> <p>Some fittings may be required from the reservoir to the Accumulator Tank.</p>
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Skirt pins -Supplier-Gibbs wire and Steel Co.

801-18-1560-40 Music wire spring .1560 cut to length .156" Dia.x 60"length - Quantity - 100

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ANNEX A

Technical Specification

CCGS Sipu Muin VLE Mid-Life Modernization Refit 2016

Prepared by:
VLE/MLM Region Project Office
P.O. Box 6000
9860 W. Saanich Rd.
Victoria BC
V8L 4B2

GENERAL SECTIONS			
Spec. #	Specification Name	Revision	Date
1	LISTE DES ACRONYMES-LIST OF ACRONYMS		
2	REMARQUES GÉNÉRALES-GENERAL NOTES		
3	RENSEIGNEMENTS SUR LE VCA-ACV PARTICULARS		
4	SERVICES-SERVICES		
5	MISE EN CALE SÈCHE ET RETOUR À FLOT-DRY-DOCKING AND REFLOATING		
6	COQUE ET STRUCTURE- SHELL AND STRUCTURE		
6a	REVÊTEMENT DE COQUE EXTÉRIEUR-EXTERIOR HULL COATING		
6a1	ENLÈVEMENT D'ÉQUIPEMENT EXTÉRIEURS-EXTERIOR EQUIPMENT REMOVAL		
6b	REVÊTEMENT DE COQUE INTÉRIEUR-INTERIOR HULL COATING		
6c	ENLÈVEMENT ET REMONTAGE DES MOTEURS-ENGINE REMOVAL & REINSTALLATION		
6d	COMPARTIMENTS ÉTANCHES-WATERTIGHT AREAS		
6e	COUVERCLES D'ÉCOUTILLE DE MOTEURS-ENGINE BAY HATCH COVERS		
6f	REMPLACEMENT DE LA JUPE-SKIRT REPLACEMENT		
6g	ESCALIER COMPARTIMENTS D'ASPIRATION VENTILATEURS-FAN INTAKE BAY STAIRS		
6h	REMPLACEMENT DES VESSIES DE CARBURANT-FUEL BLADDER REPLACEMENT		

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7	FENÊTRES DE TIMONERIE-CONTROL CABIN WINDOWS		
7a	INSTALLATION DE TREUIL DE MÂT-MAST WINCH INSTALLATION		
7b	REMPLACEMENT DES ESSUIES GLACES-WINDOW WIPERS REPLACEMENT		
8	REMPLACEMENT DE L'ISOLANT DE LA CABINE PRINCIPALE-MAIN CABIN INSULATION REPLACEMENT		
9	MODIFICATION DU SYSTEM DE CONTROL DES MOTEURS 3412-3412 ENGINE CONTROL SYSTEM MODIFICATION		
10	REMPLACEMENT DES VALVE DE CARBURANT ET SERVICES DES POMPES A CARBURANT-FUEL SYSTEM VALVE REPLACEMENT AND OVERHAULING OF FUEL PUMPS		
11	ÉLECTRONIQUE ET NAVIGATION ÉQUIPEMENT CÂBLAGE-ELECTRONIC & NAVIGATION EQUIPMENT WIRING		
11a	INSTALLATION DE SYSTEM DE RADAR- INSTALLATION OF RADAR		
11b	INSTALLATION DE SYSTEM DE- INSTALLATION OF COBHAM DIGITAL AUDIO CONTROL SYSTEM		
12	INSTALLATION DE TRAME DE TRANSMISSION DE PROPULSION-PROPULSION TRANSMISSION FRAME INSTALLATION		
13	SERVICE DE TRANSMISSION DES VENTILATEURS DE SUSTENTATION-LIFT FAN TRANSMISSION SERVICING		
14	MODIFICATION DES SOUPAPES DE DRAIN DE PONT-DECK DRAIN VALVES MODIFICATION		
15	SERVICES DES ATTACHES DE PONT-WELLDECK TIE DOWN POINTS SERVICING		

1. List of Acronyms

LISTE DES ACRONYMES/LIST OF ACRONYMS			
AT	Autorité technique	ACV	Air Cushioned Vehicle
BCS	Bureau canadien du soudage	CCG	Canadian Coast Guard
BFE	Biens fourni par l'entrepreneur	CE	Chief Engineer
BFG	Biens fournis par le gouvernement	CLC	Canada Labour Code
CCT	Code canadien du travail	CSA	Canadian Standards Association
CM	Chef Mécanicien	CSM	Contractor Supplied Material
CSA	Association canadienne de normalisation (Canadian Standards Association)	DFO	Department of Fisheries and Oceans
FSR	Représentant détaché (Field Service Representative)	CWB	Canadian Welding Bureau

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GCC	Garde côtière canadienne	FSSM	Fleet Safety & Security Manual
GHW	Griffon Hoverwork	GTAW	Gas Tungsten Arc Welding
GTAW	Gas Tungsten Arc Welding	FSR	Field Service Representative
IEEE	L'Institut d'ingénieurs en électricité et électronique (Institute of Electrical and Electronic Engineers)	GHW	Griffon Hoverwork
LHT	Longueur hors tout	GSM	Government Supplied Materials
MPO	Pêches et Océans Canada	HC	Health Canada
MSDS	Fiche signalétique de sécurité du produit (Material Safety Data Sheet)	IEEE	Institute of Electrical and Electronic Engineers
MSSF	Manuel de sûreté et de sécurité de la Flotte	LOA	Length over All
RSSTM M	Règlement sur la santé et la sécurité au travail en milieu maritime	MOHS R	Maritime Occupational Health and Safety Regulations
SC	Santé Canada	MSDS	Material Safety Data Sheet
AP	Agent de projet	PO	Project Officer
SGSS	Système de la gestion de la sécurité et la sureté	PWGC	Public Works and Government Services Canada
SIMDUT	Système d'information sur les matières dangereuses utilisées au travail	SSMS	Safety & Security Management System
SMTC	Sécurité maritime Transports Canada	TCMS	Transport Canada Marine Safety
SST	Santé et sécurité au travail	TIG	Tungsten Inert Gas Welding
TIG	Tungsten Inert Gas Welding	TA	Technical Authority
TPSGC	Travaux publics et services gouvernementaux Canada	WHMIS	Workplace Hazardous Material Information System
VCA	Véhicule à coussin d'air	WLL	Working Load Limit

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2.0 GENERAL NOTES

2.1 General

These General Notes describe the CCG requirements applicable to all accompanying Mid-Life Modernization contract.

- 2.1.1** The Contractor must refer to TP 5579E - Standards Relating to Design, Construction and Operational Safety of Dynamically Supported Craft in Canada Vol.1; Air Cushion Vehicles for all regulatory concerns associated to proposed modifications, testing procedures and other related issues.
- 2.1.2** Annex 2B, 2C and selected chapters of annex 2A must be referenced for general notes and procedures associated to the ACV's particulars. The TA must be consulted regarding all discrepancies observed between the as fitted and Annexes provided.

2.2 References

2.2.1 Applicable Regulations and Documentation:

ACV Specific	Title	Location
SP 7134 Book1	ACV Sipu Muin – Maintenance Manual	Annex 2A
SP 7134 Book 2	ACV Sipu Muin – Maintenance Manual	Annex 2B
SP 7134 Book 3	ACV Sipu Muin – Maintenance Manual	Annex 2C
Publications		
TP5579	Standards Relating to Design, Construction and Operational Safety of Dynamically Supported Craft in Canada	
TP3177E	Standard for the Control of Gas Hazards in Vessels to be Repaired or Altered	
NFPA 2010	Fixed Aerosol Fire-Extinguishing Systems	
T127E	Transport Canada Marine Safety Electrical Standard	

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TP 3669	Standards for Navigating Appliances and Equipment	
TP 14231	Marine Occupational Health and Safety Program	
TP 14612	Procedures for approval of Life-saving appliances and fire safety systems, Equipment and Products /Procedures for approval of Life-saving appliances and fire safety systems, Equipment and Products	
IEEE 45	Recommended Practice for Electrical Installation on Ships	
70-000-000-EU-JA-001	Specification for the Installation of Shipboard Electronic Equipment	
IEC 60533	Electrical and Electronic Installation in ships- Electromagnetic Compatibility	
IEC 60945	Maritime Navigation and Radio communication equipment and systems-methods of testing and required test results	
CSA W47.1	Certification of Companies for Fusion Welding of Steel Structures Division 2 Certification	
CSA W47.2	Certification of Companies for Fusion Welding of Aluminum	
CSA W59	Welded Steel Construction – Metal Arc Welding	
CSA W59.2	Welded Aluminum Construction	
ISO 9712:2005	International Standards for NDT	
18-080-000-SG-001	Welding of Ferrous Materials	
18-080-000-SG-002	Welding of Aluminum and Aluminum Alloys	
TBD	Computer Aided Design (CAD) using AUTOCAD	
SSPC	The Society for Protective Coatings	
Acts		
CSA	Canada Shipping Act	
CLC	Canada Labour Code	
Regulations		

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MOHS	Maritime Occupational Health and	
SSTMM/MOHS	Maritime Occupational Health and Safety Regulations	
Machinery Regs.	Marine Machinery Regulations (SOR/90-264)	
Hull Regs.	Hull Inspection Regulations (C.R.C., C. 1432)	

- 2.2.2** Technical Authority
Jean-Luc Arsenault
Jean-Luc.Arsenault@dfo-mpo.gc.ca
Tel: 250-363-6976
Cell: 418-217-2539
9860 West Saanich Rd, Sydney, BC, V8L 4B2
- 2.2.3** Project Officer
TBD

2.3 Conditions and Definitions

The following conditions and definitions are applicable to all work contained in the Specifications and are intended to outline the quality of workmanship and practice that is the minimum acceptable level:

- 2.3.1** The word "install" means that the Contractor must connect mechanically and electrically and provide the labour and materiel to complete the installation;
- 2.3.2** The word "reinstall" means a piece of equipment that the Contractor has effected repairs on and is to be returned/installed in its original location and be mechanically and electrically connected. The Contractor must provide the labour and materiel to complete the reinstallation;
- 2.3.3** The word "remove" means that the Contractor must provide all labour and materiel to remove the unit, equipment, materiel, or system in its entirety. Part of the removal process is to blank openings, restore insulation and paint;
- 2.3.4** The word "relocate" means that the Contractor must provide all labour and material to remove the unit, piece of equipment, or system and to install the same unit, piece of equipment, or system in the new location;
- 2.3.5** The term "or equivalent" means a substitute which has equal characteristics i.e. (size, materiel type, life, weight, input, and output) as approved by the TA. A comparison of the general specifications must be provided to the TA for the equipment specified and the "or equivalent" (i.e. old compared to the new);
- 2.3.6** The term "overhaul" as applied to any mechanical equipment, structure or system comprises: disassembly into component parts; cleaning examination of parts for defects; gauging of parts for wear; reporting of parts worn beyond specification limits

or otherwise defective and reassembly followed by specification adjustments; tests; and functional trials;

- 2.3.7** The word "disconnect" means the Contractor must mechanically and electrically disconnect the piece of equipment of all piping, wiring, seatings and other attachments permitting the removal of the unit as a whole;
- 2.3.8** The word "disassemble" means that the Contractor must provide all labour to take apart, piece by piece, the equipment, machinery or system to be examined or repaired;
- 2.3.9** The word "reassemble" means that the Contractor must provide all labour and material to put together, piece by piece, the equipment, machinery or system on completion of examination or repair;
- 2.3.10** The words "Additional Work Procedures" means the procedures as defined in the Contract ANNEX G - PROCEDURE FOR PROCESSING UNSCHEDULED WORK and includes any additional work required on a system, sub-system or equipment which the original specification did not specify;
- 2.3.11** The word "calibrate" means the adjustment of readings and measurements to a known standard;
- 2.3.12** The word "check" means that the Contractor must provide labour to find faults by sighting, feeling or listening. The checking of any equipment does not involve the disturbance or removal of parts, components or sub-assemblies;
- 2.3.13** The word "examine" means that the Contractor must provide labour for the process of systematically examining, checking and testing equipment, records or administrative procedures to detect actual or potential defects or errors;
- 2.3.14** The word "test" means that the Contractor must provide labour to conduct the operation of a unit in relation to a stated standard or procedure;
- 2.3.15** The words "set-to-work" means the tuning, alignment and adjustment of equipment/systems required subsequent to satisfactory installation. Inspection to make the equipment/systems ready for technical acceptance trials;
- 2.3.16** The word "trials" is an element of QA that means an action(s) by which the Contractor proves by a visual or instrumental presentation that the equipment or system satisfies the requirements of the specified trials agenda; and
- 2.3.17** The term "functional test" means operation of a piece of equipment in all its normal operating modes and throughout its operating range to establish that it will perform its designed function within normal operating parameters as indicated in the manufacturer's documentation.

2.4 Miscellaneous Information – General

- 2.4.1** Hovercrafts are unique vehicles which combine marine and aviation assets.
- 2.4.2** The technical group which services the craft has been extensively trained and have developed the skills required for the operation and maintenance of these craft.
- 2.4.3** CCG with provide technical group assistance as required.

-
- 2.4.4** The Contractor must maintain those areas of the ACV which Contractor personnel use to access those areas where work is to be undertaken, in a clean condition, free from debris and garbage must be removed daily.
- 2.4.5** Upon completion of this contract, the Contractor must be responsible for the removal of all garbage generated from the work of this specification and for returning the ACV to the state of cleanliness in which the ACV was at the start of the contract period.

2.5 Miscellaneous Information – Supervision of Work

- 2.5.1** Specification items where CCG prefers that a craft specialist be in attendance during removal, overhaul or reinstallation will be noted in the specific item.
- 2.5.2** The craft specialists will provide technical information to the Contractor as required.
- 2.5.3** The Contractor will remain responsible to provide all necessary labour and is responsible and liable for all work completed unless work is completed by CG crew (technicians).

2.6 Miscellaneous Information –Mechanical Components – Removal & Rebuild

- 2.6.1** With many of the components on the craft, the support crew at CCGB Trois-Rivière are the local factory trained OEM technical specialists.
- 2.6.2** Many of the components removed by the yard will be sent to CCGS Trois-Rivière for rebuild by CG crew.
- 2.6.3** In many cases replacement units will be held in inventory and readily available to the contractor.
- 2.6.4** All inspections and overhauls on removed components will be completed in order for the Contractor to meet their Production Schedule.
- 2.6.5** The contractor is to indicate in their Project Schedule the required completion date for components shipped to CCGB Trois-Rivière which are to be returned to the yard for re-installation.
- 2.6.6** Craft specialists/equipment are only available to the contractor where indicated in the specification or agreed to in the Q&A following the bidders conference.
- 2.6.7** The Contractor is responsible to schedule the time requirements of the Engineering Technician and advise the TA in advance of the requirement.

2.7 Miscellaneous Information-Electronic Components- Removal & Repair

- 2.7.1** Many of the electronic components/equipment onboard are specialized in nature.
- 2.7.2** Craft support crew at CCGB Trois-Rivière are, in many cases, the local factory trained technical specialists.
- 2.7.3** Much of the electronic equipment must be removed, for internal maintenance/replacement following arrival at the Contractor's site and prior to departure at the completion of the project.
- 2.7.4** With much of the electronic work planned a CG electronic technician is available to assist with the installations, hook-up and testing with the Contractor.

-
- 2.7.5** The Contractor is responsible to schedule the time requirements of the Electronics Technician and advise the TA in advance of the requirement.

2.8 Occupational Health and Safety

- 2.8.1** The Contractor and all sub-contractors shall follow Occupational Health and Safety (OHS) procedures in accordance with applicable federal and provincial OHS regulations ensuring that Contractor activities are carried out in a safe manner and do not endanger the safety of any personnel.
- 2.8.2** Where "Safety Management System" is referenced in this document, it is referring to the Contractor's Safety Management System, which must be in affect while in the Contractor's Care and Custody and must be in accordance with the applicable OHS regulations and procedures.
- 2.8.3** When the Contractor works on the craft while in the Care and Custody of the Canadian Coast Guard, the Safety Management System of CCG must be followed.
- 2.8.4** The Contractor must identify a specified person that is responsible for the safety management of the work site. The Safety Manager must ensure that daily safety rounds are carried out and that safety issues are identified and safety precautions are maintained.
- 2.8.5** Areas that pose a hazard as a result of the specification work are to be secured and clearly identified by the Contractor with signage to advise and protect all personnel from the hazard in accordance with applicable regulations.

2.9 Access for Maintenance, Installation and Removal

- 2.9.1** The layout of newly installed machinery and equipment must be designed and constructed to permit ready access for routine maintenance, operational checks and operational inspections without disturbance of other machinery, equipment or structure.
- 2.9.2** The Contractor must determine best routes for installing and removing equipment. All lifting points currently fitted on the ship must be treated as uncertified, and must be certified before use by the Contractor
- 2.9.3** Manufacturer's recommended removal clearances must be allowed for.
- 2.9.4** After equipment installation and/or removal the Contractor must make good all equipment relocations, blemishes, and penetrations and must return the ship to the As-Delivered working condition.

2.10 Assembly of Components

- 2.10.1** The Contractor must ensure that during installation of specified equipment, that parts and assembled equipment are cleaned of smudges, spatter or excess solder, weld metal

and metal chips or any other foreign material which might detract from the intended operation, function, or appearance of the equipment. (This would include any particles that could loosen or become dislodged during the normal expected life of the equipment). All corrosive material must be removed. This cleaning must take place before the parts are assembled into the equipment.

2.10.2 Covers, cowlings and components damaged by the Contractor must be replaced with a new CFM cover, cowl, or component.

2.10.3 Where torque specifications are not provided by the manufacturer, standard SAE nut and bolt torques must be used.

2.11 Access to Worksite

2.11.1 The Contractor shall ensure that the TA, the CE and CCG have unrestricted access to the worksite at all times during the contract period.

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

2.12 Workplace Hazardous Materials Information System (WHIMS)

2.12.1 The Contractor must provide the TA with Material Safety Data Sheets (MSDS) for all Contractor and sub-contractor supplied WHIMS controlled products. MSDS sheets are to be in the format requested in the Documentation section of the General Notes.

2.12.2 All MSDS sheets must be maintained in accordance with OHS procedures.

2.12.3 The TA will provide the Contractor with access to MSD sheets for all controlled products on the ship for all specified work items.

2.13 Smoking in the Work Space

2.13.1 The Contractor must ensure compliance with the Non- Smokers' Health Act. The Contractor shall ensure that any person acting on their behalf are in compliance with this Act at all times.

2.13.2 The Contractor must ensure that there is absolutely no smoking onboard the craft by their employees, sub-contractors, including the employees of any sub-contractors.

2.14 Pre-work and Post-Work Inspection

2.14.1 Before the Contractor starts any work on the ACV the Contractor's Quality Assurance Representative and the TA must walk through each space and area where work is to take place, including access and removal routes and areas adjacent to those where the work is to be done as a result of this specification. The Contractor's Quality Assurance

Representative must take digital pictures of each area showing the outfit therein and download the photos in JPG format onto a CD or DVD. Each picture must be dated and labeled as to the location on the ACV. Copies of this CD or DVD are to be provided to the TA for reference purposes within 48 hours of the start of the contract.

- 2.14.2** Once all known work and final clean-up has been completed, the Contractor's QA Representative and TA must perform a 'walk through' of the ACV to view all areas where work was performed by the Contractor. Any deficiencies or damage noted must be recorded and compared to the photos and if deemed to have been caused by the Contractor as a result of the work the damage must be repaired by the Contractor at no cost to the Coast Guard.

2.15 Fire Protection

- 2.15.1** The Contractor must ensure the isolation, removal and installation of fire detection and suppression systems or any components thereof, is performed by a qualified "Stat-X" authorized service technician. Prior to the close of contract, a qualified "Stat-X" authorized service technician must recertify the fire detection and fire suppression systems as fully functional. A signed and dated Fireaway Inc. reactivation certificate must be submitted to the TA prior to the close of contract.
- 2.15.2** The Contractor must ensure protection against fire at all times including when working on the ACV's fire detection and / or suppression system(s). The Contractor must adhere to CLC and FSSM requirements for hot work on an unprotected ACV.
- 2.15.3** The Contractor must note that failure to take the necessary precautions while performing work on the ACV's fire suppression system(s) could result in the accidental discharge of the fire suppression agent(s). The Contractor must recharge and certify at his cost, container(s) or systems that are discharged as a result of such work.

2.16 Regulatory Inspections and/or Class Surveys

- 2.16.1** The Contractor must contact, coordinate, schedule, and be completely prepared for all regulatory inspections and surveys by the applicable authority: i.e. TCMS, HC, Environment Canada or others as indicated by individual specifications.
- 2.16.2** Documentation generated by the above inspections and/or surveys indicating that the inspections and/or surveys were conducted (i.e. original signed and dated certificates) must be provided to the TA in accordance with the "Documentation" Section of these General Notes.1.11.3 Any documentation generated by the above inspections and/or surveys to show that the inspections and/or surveys were conducted must be provided to the TA.
- 2.16.4** The Contractor must not substitute TCMS regulatory survey with inspections carried out by the TA.

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- 2.16.5** The Contractor must provide timely advance notification (minimum of 2 working days) of scheduled regulatory survey to the TA so they may witness the inspection.
- 2.16.6** The Contractor must pay all costs and fees associated with TCMS, HC, Environment Canada, or any other inspection required by the specification unless otherwise indicated.

2.17 Test Results and Data Book

- 2.17.1** The Contractor must develop an Inspection, Test and Trials Plan which must include as a minimum all deliverables, inspections, tests, trials, TCMS inspection and survey points for the work of this Specification. The Inspection, Test and Trials plan must be provided for TA review 2 weeks prior to the originally scheduled start of the inspections. The Inspection, Test and Trials Plan must be sent by email to the TA in PDF format. 1.12.2 Recorded dimensions shall be to a precision of two decimal places (unless otherwise stated) in the measuring system currently in use on the ACV.
- 2.17.3** All tests, measurements, calibrations and readings must be recorded, signed by the person taking the measurements, dated and provided in PDF format by email to the TA.
- 2.17.4** Recorded dimensions must be to a precision of two decimal places (unless otherwise stated) in the measuring system currently in use on the ACV.
- 2.17.5** The Contractor must provide to the TA current and valid calibration certificates for all instrumentation used in the Inspection, Test and Trials showing that the instruments have been calibrated in accordance with the manufacturer's instructions.
- 2.17.6** All requested documentation must be submitted in electronic format by email to the TA prior to the close of contract. All reports, drawings and certificates must be signed and submitted with company letterhead.
- 2.17.7** The Contractor must update all drawings affected by the work of this specification. The Contractor must create and supply all drawings required by the work of this specification. The Contractor may provide working drawings in PDF format during the work of the contract period. The Contractor must supply new and updated drawings in AutoCAD 2010 DWG format showing the as fitted arrangements.
- 2.17.8** The Contractor must report the findings, work completed, and final condition for the work of this specification. All documentation from the contract period must be inserted in the final version of the Test Results and Data Book and emailed to the TA on completion of the contract.

2.18 Contractor Supplied Materials and Tools

- 2.18.1** The Contractor must ensure all materials are new and unused.
- 2.18.2** The Contractor must ensure replacement material such as jointing, packing, insulation, small hardware, fasteners, oils, lubricants, cleaning solvents,

preservatives, paints, coatings etc. are new and in accordance with the equipment manufacturer's drawings, manuals and/or instructions.

- 2.18.3** Where no particular item is specified or where substitution must be made, the Contractor must submit an Observation Report indicating the substitution or item not specified to the TA. The Contractor must provide information about materials used, certificate of grade and quality of various materials to the TA prior to use.
- 2.18.4** The Contractor shall provide all equipment, devices, tools and machinery such as crane, staging, scaffolding and rigging necessary for the completion of the work in this specification.
- 2.18.5** The Contractor must deliver and store all new CFM equipment at their facility. The CFM must be stored in a secure, environmentally controlled space in accordance with the equipment storage section of this specification.
- 2.18.6** The Contractor must provide waste disposal services for any oil, oily waste or other hazardous or controlled waste generated by the work as per the specification. The Contractor must provide waste disposal certificates for all of the above generated waste and the disposal certificates must indicate that the disposal was in accordance with Federal, Provincial and Municipal regulations in effect.

2.19 Government Supplied Materials, Tools, and Equipment

- 2.19.1** All tools are Contractor supplied unless otherwise stated in the technical specifications.
- 2.19.2** Where tools are supplied by the TA they must be returned by the Contractor in the same condition as when they were borrowed. Borrowed tools must be inventoried and signed for by the Contractor on receipt and return to the TA.
- 2.19.3** Any GSM not specifically stated in the Technical Specification must be received by the Contractor and stored in accordance with the Equipment Storage section of this specification. These activities are to be covered by the Procedures for Processing Unscheduled Work.

2.20 Storage

- 2.20.1** Equipment which must be removed to provide work access, such as covers, cowlings or other "interference items" must be stored under cover and in conditions agreed with the TA, or in accordance with the equipment manufacturer's instructions if such are available.
- 2.20.2** All equipment and items must be stored in such a manner so as to be easily accessible for inspection. No items are to be stored directly on floors.
- 2.20.3** The five (5) removed diesel engines must be kept in a dry, heated, covered and secure area. The expansion tank are to be kept full of appropriate coolant.

2.21 Restricted Areas

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- 2.21.1** The Contractor must not enter the following areas except to perform work as required by the specifications: all cabins, offices, workshops, Engineers' office, Wheelhouse, Control Room, all washrooms, Galley, Mess Rooms, Lounge areas and any other areas restricted by signage.
- 2.21.2** The Contractor and Contractor's employees must not use the ACV's washrooms and crew mess facilities. The Contractor must provide the necessary amenities for the Contractor's and sub-contractor's employees as required.

2.22 Contractor Inspections and Protection of Equipment and the Worksite

- 2.22.1** The Contractor must be responsible for the disassembly and removal of all obstructions to work described in this specification and must reinstall same as per original at Contractor's expense prior to the close of contract.
- 2.22.2** The Contractor must coordinate an inspection with the TA on the condition and location of items to be removed prior to carrying out the specified work or to gain access to a location to carry out the work.
- 2.22.3** Any damage incurred as a result of the Contractor's work and that is attributable to the Contractor's work performance must be repaired by the Contractor at his expense. Materials used in any replacement or repairs must meet the criteria for CSM noted above.
- 2.22.4** The Contractor must take measures to ensure that surfaces and components of equipment installed on the craft are protected against damage, soiling, and contamination as a result of contracted work.
- 2.22.5** All electrical and electronic equipment and components must be protected during the contract against physical damage, internal damage, and by the effects of adverse temperatures or other environmental conditions.
- 2.22.6** The Contractor must protect equipment that could be damaged as a result of movement of materials and equipment nearby. The Contractor must also protect equipment from nearby sources of contamination including but not limited to burning, welding, grinding and painting.
- 2.22.7** All openings in machinery and/or systems prior to connections being made must be kept covered by suitable inserts or covers at all times.
- 2.22.8** The Contractor must obtain and follow instructions from its sub-Contractors for any special protection required for their equipment during the project work. Such instructions must be made available to the TA.
- 2.22.9** Physical protection including but not limited to plastic sheets, fireproof covers, heavy weight material covers, wood plugs, wood encasements and heaters must be used as required.

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- 2.22.10** The Contractor must protect all equipment and surrounding areas from damage. Work areas are to be protected from the ingress of water, welding and blasting grit etc. Temporary covers to work areas must be installed as required.
- 2.22.11** The Contractor must protect the craft from the possibility of vermin infestation (insect/mammal/bird). If an infestation does occur during the contract period the Contractor must bear all costs to ensure the craft is made vermin free before the craft's departure and contract completion.
- 2.22.12** The Contractor must afford the opportunity for the TA to conduct an inspection with the contractor on the condition and location of items to be removed prior to either carrying out the specified work or gaining access to a location to carry out the work.
- 2.22.13** The Contractor must take a before picture of conditions prior to removing any items. These photos are to be in accordance with the Documentation section of the General note, named according to the specification section that resulted in removing those items.
- 2.22.14** Prior to the close out of any item under this specification, the Contractor must afford the TA the opportunity to verify the work has been completed in accordance with the specification. At that time the contractor must have available all photo's, documents, reports, and trials in relation to the item being closed out as completed.

2.23 Recording of Work in Progress

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

2.24 List of Confined Spaces

- 2.24.1** The Contractor may request a list of the ACV's identified confined spaces at the Pre-Refit meeting.
- 2.24.2** Prior to commencing work in any confined space, the Contractor must ensure that a qualified person issues a "Gas Free Certificate" for that space. Certificates must specify, "safe for persons" or "safe for hot work" as appropriate. The Contractor must adhere to the safety management system requirements as determined in the Pre-Work Meeting. All copies of certificates generated are to be provided to the TA in accordance with the Documentation section of the General Notes.
- 2.24.3** Any entry into confined spaces onboard the craft during the contract period must be conducted in accordance with the safety management system as determined in the Pre-Work Meeting.
- 2.24.4** The ballast/void spaces as well as the engine bays should be considered confined spaces.

2.25 Lead Paint and Paint Coatings

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- 2.25.1** All coatings containing lead are prohibited from use.
- 2.25.2** The CCG will advise the Contractor as to where lead based paint exists on the craft. The Contractor must ensure that coatings in the affected work areas where work is performed is in accordance with applicable Federal and Provincial regulations.

2.26 Asbestos Containing Materials

- 2.26.1** The Contractor must not use any asbestos containing materials.
- 2.26.2** Prior to the start of work, the Contractor must consult with the CE on the possibility of asbestos containing materials in the work areas.
- 2.26.4** Handling of any asbestos containing materials must be performed by personnel trained and certified in the removal of asbestos in accordance with Federal, Provincial and Municipal regulations in effect and in accordance with the Fleet Safety and Security Manual.
- 2.26.5** The Contractor must provide to the TA disposal certificates for all asbestos containing material removed from the ACV indicating that the disposal was in accordance with Federal, Provincial and Municipal regulations in effect.
- 2.26.6** The Contractor must provide an "Observation Report (OR)" with reference to any concerns or intentions in regards to asbestos containing materials not already specified. The Contractor is to identify any materials that are suspected to contain asbestos prior to any work being completed. Any approved work resulting from the OR will follow the Procedures for Processing Unscheduled Work.

2.27 Removed Materials and Equipment

- 2.27.1** All removed equipment as a result of the work shall remain the property of the CCGS unless otherwise instructed.
- 2.27.2** All materials and equipment removed for disposal shall be disposed of in accordance with all applicable environmental regulations. Prior to the close of contract, the Contractor shall submit disposal certificates to the TA attesting to the disposal of all hazardous waste in accordance with all applicable environmental regulations.

2.28 Welding Certification

- 2.28.1** For any item requiring the application of fusion welding for steel structures, the Contractor or his Sub-Contractors must be certified in accordance with the Canadian Welding Bureau, CSA\ACNOR W47.1; Division 2.1 certification – latest revision.

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- 2.28.2** For any item requiring the application of fusion welding for stainless steel structures, the Contractor or his Sub-Contractors must be certified in accordance with the Canadian Welding Bureau, CSA\ACNOR AWS; Division 16 certification – latest revision.
- 2.28.3** For any item requiring the application of fusion welding to aluminum structures, the Contractor or his Sub-Contractors must be certified in accordance with the Canadian Welding Bureau, CSA\ACNOR W47.2-11.
- 2.28.4** The Contractor must provide documentation to the TA clearly identifying the welding certification of all employees performing any welding included in this specification.
- 2.28.5** All new welds shall be inspected using dye penetrant and ultrasonic testing (UT) to current industry standards for marine construction by a NDT inspector certified to level 2 or higher for the NDT methods used.

2.29 Electrical Installations

- 2.29.1** All electrical installations and repairs shall be carried out in accordance with the latest revisions of Transport Canada Marine Safety Electrical Standard TP127E and IEEE Standard 45 Recommended Practice for Electrical Installation on Ships.

2.30 Documentation

- 2.30.1** Documentation is identified as a deliverable in the specification items requesting them.
- 2.30.2** Instruction Manuals must be individually bound in a hard cover 3 ring book format with a page size of 8 1/2" x 11". Drawings of a larger size must be concertina folded to suit. The covers must have the following information printed thereon:
- a. CCGS SIPU MUIN
 - b. Equipment Identification;
 - c. Equipment Manufacturer;
 - d. Date.
- 2.30.3** Plastic tabbed indices must be provided for all sections of the manuals. Major equipment components must be subdivided into separate sections of the manuals.
- 2.30.4** A master index must be provided at the beginning of each binder indicating all items included in each section.

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- 2.30.5** A list of names, addresses and telephone numbers of contacts associated with the equipment manufacturers must be provided that can be used after the project completion for maintenance and information data purposes.
- 2.30.6** A copy of the final reviewed and approved As-Fitted drawing(s) must be provided within the maintenance manual.
- 2.30.7** One (1) electronic copy of each manual must be provided in accordance with the Data Book section of this specification.
- 2.30.8** Two (2) paper copies of manuals and data sheets must be supplied in both official languages for all Contractor Furnished Equipment items.
- 2.30.9** All documentation created by the Contractor must be provided to the Coast Guard in both official languages.

2.31 Documentation-Data Book

- 2.31.1** The Contractor must provide all documentation generated as a result of specified deliverables in both electronic and paper formats. There must be 2 paper copies of each document, in two separate binders, as part of the contractors QA program. An electronic copy of all documentation must also be provided to the TA in accordance with the formats described in this specification item.
- 2.31.2** All copies of documents generated as a result of specified deliverables will be referred to as the "Data Book".
- 2.31.3** The Contractor must provide to the TA all the files generated as part of the Data Book prior to the contract being considered complete. The files must be in electronic format (CD-ROM, DVD-ROM, Flash Drive / Memory Stick). Each specification item is to have its own folder named according to the specification item. For example "2.0 General Notes".
- 2.31.4** Any documentation, media, and reports that are the results of Additional Work are also to be included as part of the Data Book.

2.32 Documentation-File Naming

- 2.32.1** File naming must be in the following format: Specification# – Date (yyyy-mm-dd) – File Name Describing Information. For Example: "2.0 – 2013-12-01 – Details of file naming.pdf".

2.33 Documentation-E-Mails

- 2.33.1** Any files sent to the CA/TA by e-mail must be named as per the "File Naming" section of this specification. All files that are e-mailed must have in the subject name: "Contract# - DATA BOOK – Date – Specification #". For Example: F7049-

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140xxx – DATA BOOK – 2014-11-30 – 2.0 General Notes. Files sent by e-mail must also be included in the “Data Book”.

2.34 Documentation-File Formatting

- 2.34.1** All documentation, reports, test results, certificates, or data obtained by the contractor in paper form must be scanned into unprotected (preferably searchable) Adobe PDF formatted files and named according to the File Naming section of this specification.
- 2.34.2** All reports, test results, certificates, or raw data obtained by the contractor in electronic format must be converted to unprotected Adobe PDF formatted files and named according to the “File Naming” section of this specification. Both the original and the converted copy are to be provided as part of the Data Book.

2.35 Documentation-Photos

- 2.35.1** All photos obtained by the contractor as requested in the specification must be provided in .JPG formatted files at a resolution of at least 640 x 480 and named according to the “File Naming” section of this specification.

2.36 Documentation- Measurements, Calibrations, and Readings.

- 2.36.1** All measurements, calibrations and readings recorded, must be signed by the person taking the measurements, dated and scanned into electronic format as part of the Data Book.
- 2.36.2** Recorded dimensions must be to a precision of three decimal places (unless otherwise stated) in the measuring system currently in use on the craft.
- 2.36.3** The Contractor must provide to the TA current and valid calibration certificates for all instrumentation used in the Test and Trials Plan showing that the instruments have been calibrated in accordance with the manufacturer's instructions. These copies are to be provided as part of the Data Book under any specification where measurements are required.

2.37 Documentation- Test Inspection Records and Certificates

- 2.37.1** Test Inspection Records and Certificates are identified as a deliverable in the individual specification item requesting them.
- 2.37.2** Test Inspection Records and Certificates must be included as a separate section in the DATA BOOK and indexed/arranged in numeric order by specification number.
- 2.37.3** The Contractor is responsible for maintaining a complete and accurate record of all tests and trials conducted on the craft and on each piece of equipment. Prior to the commencement of a trial, all relevant documentation and associated test

sheets, including shop test data, must be complete and attached to the trials agenda.

- 2.37.4** All tests and trials data must be legible both in hard copy and electronic format. If necessary, handwritten records may require transcription into electronic format in order to be acceptable. The original must be signed by TCM, the TA, the Contractor and where necessary by the sub-Contractors and/or FSR's who witnessed the tests. All the Data must be submitted to the TA in accordance with the "Documentation" section of these General Notes.

2.38 Documentation-Drawings

- 2.38.1** This section, to be referred to as the Drawings section of the General Notes, is intended to be used as reference for the minimum standards when specified deliverables are to be drawings.
- 2.38.2** The contractor must have on staff or through a sub-contractor a person qualified and experienced in the use of AutoCAD who will create or modify drawings that result from the work.
- 2.38.3** The Contractor must comply with the Canadian Coast Guard National CAD Standards titled "Computer Aided Design (CAD) using AUTOCAD" provided.
- 2.38.4** Drawing disks must be clearly labeled with the Contract Number, file names and drawing numbers. If a complete listing exceeds the label size, a "readme.txt" file in ASCII format must be provided with each disk. A printed copy of the Readme file must accompany each disk. Disks must be labeled As-Fitted drawings for those drawings that have been approved and finalized.
- 2.38.5** Final As-Fitted prints/plots must not contain markings or corrections by hand (i.e. marker, pen, pencil, etc.). Drawings containing mark-ups must be revised and re-printed/plotted.
- 2.38.6** The Contractor must prepare all the working drawings necessary for the project requirements and modernization work.
- 2.38.7** The Contractor must furnish all drawings required by sub-Contractors, trades and other consultants.
- 2.38.8** Schematic drawings of systems must include all pertinent system information, including sizes, dimensions, labeling, equipment locations, and all information relating to system fittings.
- 2.38.9** The Contractor must have in place a complete system of documenting and controlling all drawing revisions affected by the work of this project. Drawing numbering system and titles must match the original drawings for clarity and include a revision number with date.

2.39 Documentation-Guidance Drawings

- 2.39.1** All technical guidance drawings are issued to the Contractor for guidance purposes only. It is the responsibility of the Contractor to develop working drawings and to ensure that all such drawings receive applicable regulatory approval. The Contractor is to note that not all technical guidance drawings supplied are As-Fitted drawings. It is the responsibility of the Contractor to physically verify all affected items.
- 2.39.2** All departures from the provided guidance drawings and project specifications must be clearly indicated by the Contractor and written approval obtained from the TA before carrying out such alterations or departures.
- 2.39.3** Specification deviations must be documented using an Observation Report.

2.40 Documentation-As Fitted Drawings

- 2.40.1** The As-Fitted Drawings are identified as a deliverable in the specification item requesting them.
- 2.40.2** Upon completion of specified work, the Contractor must transfer the mark-ups from any working drawings where installation changes were made to drawings affected by the project work. These drawings become the As-Fitted drawings for the project work. The Contractor is responsible for providing updated craft drawings affected by the project work to the TA prior to completion of the contract. The affected drawings must be submitted in the following formats:
- a. Two (2) plotted copies of the latest revision of each of the As-Fitted drawings;
 - b. Two (2) electronic copies of the latest revision of each As-Fitted drawing
- 2.40.3** Plotted drawings must be on standard ANSI paper sizes.
- 2.40.4** Marked up drawings are to be AutoCAD drawings where original AutoCAD drawings are provided. If no AutoCAD drawings were provided then scanned files (raster format) must be supplied to CCG in one of the following formats:
- a. DXF format;
 - b. TIFF format.

2.41 Documentation-Manuals

- 2.41.1** This section, to be referred to as the Manuals section of the General Notes, is intended to be used as reference for the minimum standards when specified deliverables are to be manuals.

2.42 Documentation-Operation Manuals-As-Fitted

2.42.1 Operation manuals must include the following items:

- a. General description of equipment operating sequence;
- b. Step by step procedure to follow in commissioning the equipment;
- c. Schematic wiring diagram for the fitted equipment; and
- d. All pertinent equipment performance criteria.

2.42.2 Where software/hardware systems are fitted, the operation manual must include the full software documentation manual in paper form for the system and an electronic copy in accordance with the Documentation Section. The minimum software documentation must include:

- a. System level diagrams describing the overall scheme of the software/hardware system;
- b. The functional specifications, which must describe in detail the functional capabilities of the system and each software components; and
- c. Project specific program listings including all comments describing the details of the code functions.

2.43 Documentation-Maintenance Manuals-As Fitted

2.43.1 Maintenance manuals are to include:

- a. Manufacturer's maintenance instructions for each item of the equipment requiring maintenance activity;
- b. Instructions are to include installation instructions, part numbers, part lists, master drawings and exploded views with part identification for all mechanical, electrical and electronic parts, name of suppliers;
- c. Summary list of each item of the equipment requiring lubrication, indicating the name of the equipment item, location of all points of lubrication, type of lubricant recommended, and frequency of lubrication; and
- d. Troubleshooting sections must be included for all equipment in the maintenance manual under a separate heading.

2.44 Identification-Nameplates

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- 2.44.1** Nameplates are identified as a deliverable in the individual specification item requesting them.
- 2.44.2** All nameplates must be in French, except where required in English and French by TCM for reasons of emergency operation.
- 2.44.3** The type of nameplates must suit the location in the craft as specified below:
- 2.44.4** Plastic:
- a. Laminated plastic nameplates, black with white core engraved through to the center core, must be provided for all devices located on the exterior surfaces of switchboards, MCC's, or local control panels. Nameplates must be secured to the equipment with machine screws.
 - b. New nameplates to be fitted on the existing equipment must be consistent in size and lettering with those already fitted or those being replaced.
 - c. Nameplates indicating feeder circuits must identify each circuit by name and number and the fuse size or trip element rating.
 - d. The Following Labels must be of laminated plastic, red with white core engraved through to the center core:
 - i. Safe Working Loads,
 - ii. Warning/Caution labels,
 - iii. Circuit Breakers with shunt trips requiring completion of remote circuits prior to being operated,
 - iv. Equipment with multiple power sources,
 - v. Circuit breaks having a potential power source connected to both sides
 - vi. Indication of any other potentially hazardous condition.
- 2.44.5** Engraved on Metal:
- a. Must be used in machinery spaces and where exposed to the weather or susceptible to covering by paint, oil or grease. Nameplates exposed to weather must be stainless steel or brass. Engraved metal nameplates must be of stainless steel or brass with lettering accentuated by means of black wax unless otherwise noted, and secured with stainless steel or brass machine screws.
 - b. A complete list of nameplates, detailing size of plate, size of lettering and inscription must be submitted to the TA for review prior to ordering and/or manufacturing.

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2.45 Identification- Wire Labelling

- 2.45.1** Wire Labelling is identified as a deliverable in the individual specification item requesting them.
- 2.45.2** All permanently installed cables must be tagged with the circuit designation at all points of connection and on both sides of bulkheads, decks, etc. Tags must be of metal compatible with the armor or cable sheathing. Both ends of the tags must be strapped to the cable with compatible metal strap after all painting has been completed. Straps must pass through holes in the tags so that tags are positively secured. Strap ends must be permanently folded and crimped. Adhesives of any kind will not be acceptable.
- 2.45.3** All wiring in panels specified to be labelled must be labeled with the Cable Number and their conductor # unless otherwise specified in equipment installation drawings.

2.46 Calendrier de production/Production Schedule

- 2.46.1** The Contractor must provide a draft production schedule showing milestones and task durations with the bid documents.

2.47 Production Schedule

- 2.47.1** The Contractor shall provide a draft production schedule showing milestones and task durations with the bid documents.
- 2.47.2** The Contractor shall conduct a daily briefing at the start of each day with the TA.

3.0 ACV PARTICULARS

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Name: CCG ACV SIPU MUIN

Type: Air Cushion Vehicle

Propulsion: Twin rudder, twin belt drive diesel, twin controllable- pitch shrouded propellers, twin air jet type bow thrusters, twin diesel lift engines.

Year Built: 1998

Principal Dimensions:

Length: 28.5 meters

Breadth, molded: 12.0 meters

Loaded Draft: N/A

Tonnage: 70.0 tonnes

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4.0 Services

4.1 General Information

4.1.1 All staging, crane services, screens, lighting and any other support services, equipment and materials necessary to carry out the work identified in these specifications must be Contractor supplied.

4.1.2 The Contractor is responsible to provide power for all work and to keep the ACV in a safe lighted condition.

4.2 Berthing

4.2.1 The berthing and mooring facilities must be suitable for a craft of this size in local weather, tide and sea conditions. Fenders must be supplied by the Contractor to prevent the craft from contacting the wharf in local weather, tide and sea conditions.

4.2.2 The Hovercraft is not to be left floating in displacement mode unattended at the contractor facility for any length of time.

4.2.3 The length of the dock must be a minimum of 90% of the length of the ACV (LOA).

4.2.4 The ACV must remain in dry dock or suitable dry land facility for the duration of the contract period.

4.2.5 The Contractor must be responsible for all movements of the ACV, including berthing and mooring of the ACV for the contract period and arrangements and costs for line handlers and tugs.

4.3 Mooring Lines

4.3.1 The Contractor must be responsible for providing the necessary mooring lines and labor required to secure the ACV alongside the facilities. The ACV's mooring lines are not to be used.

4.4 Gangways

4.4.1 Contractor must supply the labor and services required for the installation and removal of two gangways or stairways, complete with handrails, safety nets and lighting for the duration of the contract. The Contractor must be required to supply and maintain the gangways.

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- 4.4.2** Any movement of the gangways or stairways required by the Contractor will be at the expense of the Contractor.
- 4.4.3** Gangways must be at separate locations to facilitate fire evacuation.
- 4.5** **ACV Security**
- 4.5.1** The Contractor must provide for the safety and security of the ACV while it is under contractor's care and custody. The Contractor remains liable for all damage and theft while the ACV is in contractor's care and custody.
- 4.5.2** The Contractor must provide for the safety and security of the GSM storage container while it is under contractor's care and custody. The Contractor remains liable for all damage and theft while the ACV is in contractor's care and custody.
- 4.6** **Parking at Contractor's Facility**
- 4.6.1** The Contractor must provide 2 parking spaces for the exclusive use of the TA and project team for the duration of the contract period. The parking spot must be appropriately identified.
- 4.6.2** The Contractor must provide 1 parking spaces for the exclusive use of PWGSC for the duration of the contract period. The parking spot must be appropriately identified.
- 4.7** **Office Services**
- 4.7.1** The Contractor must provide furnished, climate control, private and secure office space for the use of the TA, CCG personnel and PWGSC during the contract period. The office space shall be located adjacent to the dry dock and vessel. The Contractor must provide commercial quality furnishings for three persons.
- 4.7.2** The Contractor must supply and provide internet connections for three computers and two telephone land-line and telephone. Any long distance charges made on this line shall be to the CCG account. The internet connection must be direct and not through the Contractor's security network.
- 5.0** **Dry-Docking and Refloating**
- 5.1** **Identification**

5.1.1 The Contractor must dry-dock the ACV, carry out the work identified in this specification and then refloat the ACV.

5.1.2 The ACV must be stowed inside a sealed shelter providing complete protection from all elements and air drafts for the duration of all work in this specification such that all work carried out in this specification is not adversely compromised by the weather elements.

5.1.3 The Contractor is to ensure the temperature and humidity is maintained at a suitable level for the period required for welding and paint application.

5.2 References

5.2.1 Hovercraft Operations Safety issues

5.2.1.1 In preparation for the arrival of the CCGS Sipu Muin the craft requires the area and approach area to be clear, clean and secure.

5.2.1.2 The Contractor must ensure that the docking area is clear of Foreign Object Debris (FOD) immediately prior to docking. A hovercraft operator will inspect the area before landing the craft.

5.2.1.3 The Contractor is responsible for any damage caused by the operation of the ACV in his facility. The contractor is to review the delivery procedure to ensure that it meets his delivery requirements.

5.2.1.4 FOD is small light objects that are likely to become airborne due to the air venting from under the skirt, (rags, clothing, sand, metal scraps, filings for example.). Rags, bags, hardhats etc. are significant and serious problem, if they are drawn into the craft propellers.

5.2.1.5 All personnel must stand well clear of the docking area – the craft crew will not require assistance in securing the craft. Anyone who must be within in the docking area must be wearing safety glasses and hearing protection at a minimum.

5.2.1.6 All dock fixtures and mooring lines must be tied down and secured.

5.2.1.7 No lines must be thrown to the craft unless directed by the craft captain or crew.

5.2.1.8 No one must attempt to board the craft until directed by the craft captain or crew.

5.2.1.9 The Contractor and hovercraft operator must have a pre docking discussion to clarify where the hovercraft must be positioned before shutting down. The Contractor and hovercraft operator must be in and maintain radio contact during the entire docking procedure.

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5.2.2 Lifting Tackle

5.2.2.1 All gear and equipment used to lift/move the craft is the responsibility of the contractor.

Titre/Title	# de Dessin/Drg. #	Emplacement/Locatio n
Landing Pads Sheets 1-3	WAP1-88-H-4013	Annex 5A
ACV Sipu Muin – Maintenance Manual General	SP 7134 Section 1 Chapter 1 General Servicing	Annex 5B

5.3 Technical

5.3.1 There are two options for Delivery/Docking of the vessel:

5.3.1.1 Option A: Delivery at Trois-Rivière Hovercraft Facility

The Contractor must take full responsibility of the craft from the TA at Trois-Rivière Hovercraft Facility and provide a price for transferring the craft to the docking facility where the work will take place.

Transfer of care and custody of CCGS SIPU MUIN will take place at:

CCG Trois-Rivière
7100 Du Pont Street
Trois-Rivières, Quebec G9A 6M2

5.3.1.2 Option B: Delivery at the Contractors Facility

If navigable waters are available, the craft will be delivered by CG to a designated dockside location and left in displacement mode (floating in the water) where the Contractor will take the care and custody of the craft from the TA and transfer it to the docking facility where the work will take place.

5.3.2 The Contractor must move the craft from the docking point to the final worksite/area. At all times during transit of the craft over land the skirt must not come into contact with the ground.

5.3.3 The craft must be "docked" at the final worksite so that each of the four landing pads is fully supported on blocks. The blocks must have a minimal height of 2 feet.

5.3.4 The craft must be set up and fully supported in a covered facility suitable for blasting, all welding procedures required and paint application regardless of external weather conditions.

5.3.5 The craft will not be flown overland during delivery to the contractor's facility.

5.3.6 There are two options for Un-Docking/Delivery of the vessel:

5.3.6.1 Option A: Delivery of the ACV to Trois-Rivière Hovercraft Facility

The CCGS SIPU MUIN will be delivered by the Contractor to:

CCG Trois-Rivière
7100 Du Pont Street
Trois-Rivières, Quebec G9A 6M2

5.3.6.2 Option B: Handing over of care and custody of the ACV to CG at the Contractors Facility.

The care and custody of the craft will be taken over by CG at a designated dockside location at the Contractor's facility. The Contractor is to float the craft in the water and leave the craft in displacement mode (floating in the water). The Contractor is to ensure a safe access to the craft for the CG crew once in the water.

5.3.7 The contractor must provide a price for undocking the craft and transferring it to the Trois-Rivière Hovercraft Facility. The Contractor must maintain care and custody of the craft until delivered and accepted by the TA at Trois-Rivier Hovercraft Facility.

5.3.8 A full set of sea trials would be completed at the Coast Guard Base using the ACV crew. If deficiencies are present as a result of the contractor's work they are to be repaired by the contractor at the CG base at the contractor's expense.

5.3.9 The contractor must provide a price for undocking the craft and relocating it to a designated dockside location and maintaining it in displacement mode [floating in the water].

5.3.10 The Contractor is to allow adequate time for the CG crew to check and test all equipment prior to resuming care and custody.

5.3.11 The Contractor will maintain care and custody of the craft until transferred to the Coast Guard Crew.

5.3.12 The Contractor must coordinate all dry-docking procedures with the ACV's commanding officer and TA.

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- 5.3.13** All procedures for craft slinging and hoisting as stated in Annex 5B must be strictly observed.
- 5.3.14** The Contractor must supply all labor, materials, crane services, equipment and facilities to dry-dock and undock the ACV.
- 5.3.15** Unless otherwise stated, all work in this specification must be carried out in a sheltered area capable of protecting the ACV from all elements.
- 5.3.16** The Contractor must provide labor and services for the handling of the ACV's mooring lines and tug assistance as required to perform the dry-docking and refloating of the ACV and any other movements required during the contract period.
- 5.3.17** The Contractor must prepare adequate blocks and necessary shoring to maintain the true alignment of the ACV's hull and machinery throughout the dry-docking period.
- 5.3.18** The Contractor must refer to Annex 5A and 5B for landing pad locations and lifting recommendations. The Contractor must block and support the craft appropriately.
- 5.3.19** The Contractor must provide landing pad supports positioned to align with the ACV landing pads and of sufficient height to allow for the completion of all work in this specification.
- 5.3.20** ACV slinging and hoisting must be in accordance with the procedures described in Annex 5B. All ACV slinging and hoisting equipment and materials must be CSM.
- 5.3.21** The Contractor must provide a ground cable between the ACV and the dock while the ACV is dry-docked as per TCMS Ship Safety Bulletin 6/89.
- 5.3.22** The Contractor must ensure that all ACV openings, including valves, drain and docking plugs are secure prior to refloating.
- 5.3.23** The Contractor must supply, install and remove upon completion, any necessary fittings and lugs necessary to carry out the work in this specification. Where lugs and/or fittings are installed and removed, the welds must be ground flush with the hull. Any damaged and/or disturbed paint work must be treated in accordance with the paint manufacturer's requirements and painted according to the ACV's paint scheme.
- 5.3.24** The Contractor must supply all labor necessary to handle the ACV's lines during the undocking process. The Contractor must be responsible to supply the services of tugs to ensure that the ACV is undocked in a safe manner and not damaged during the procedure.

5.4 Proof of Performance

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5.4.1 The Contractor, in the presence of the TA, must verify that all work on the hull is complete, all docking plugs and hull openings are secure and the ACV is in all respects ready to be refloated.

5.5 Deliverables

5.5.1 The Contractor must provide the three copies of a stability book in both official languages.

6 Shell and Structure

6.1 Identification

6.1.1 The Contractor must carry out all work as described in Annex 6 of this specification.

6.2 References

Titre/Title	No. du dessin/Drg. No.	Emplacement/Location
Hall Marine Design (Hmd) Ltd. Drawings and Specifications	As Identified on HMD Specifications	Annex 6 Shell and Structure
ACV Sipu Muin Structural Drawings	As Identified on HMD Specifications	Available from TA on request

6.3 Technical

6.3.1 The ACV must be stowed inside a sealed shelter protected from all-weather elements and free of all air drafts for the duration of all work in section 6 of this specification such that the weld quality of all repairs is not compromised by the elements.

6.3.2 All necessary precautions must be taken to maintain the true alignment of the ACV's hull and machinery throughout the dry-docking period and in particular where hot work is taking place in proximity of critical equipment such as equipment transmissions. Any misalignment resulting from work in this specification must be corrected at the contractor's expense.

6.3.3 The welding process used for all work in section 6 of this specification must be Metal Inert Gas (MIG) suitable for 2 mm thick 5083 grade aluminum plate and 6082 aluminum extrusions.

6.3.4 All welds must be performed using a CSM modern synergic welding machine (EWM Phoenix 421 or equivalent) and CSM 5183 grade filler metal.

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- 6.3.5** The metal around the repair area must be thoroughly cleaned with acetone or lint free cloths and abraded using zirconia alumina sanding discs and stainless steel wire brushes immediately before welding.
- 6.3.6** All insert plates must be butted to the existing material and all welded corners shall have 100 mm radiuses.
- 6.3.7** Insert plates must have full penetration welds with one side welded first. The opposite side must then be ground down to base metal and welded.
- 6.3.8** Unless otherwise stated, all aluminum plate and extrusions required to complete all work in section 6 of this specification must be new GSM.
- 6.3.9** Unless otherwise stated, all equipment and consumables such as filler metal, inert gas and surface preparation materials required to complete all work in section 6 of this specification must be CSM.
- 6.3.10** Prior to the start of work on each item in Annex 6, the Contractor must verify the accuracy of the specification and drawing(s) against the as fitted structural arrangement.

6.4 Proof of Performance

- 6.4.1** Prior to the start of each item in Annex 6, the Contractor must afford the TA the opportunity to verify the accuracy of the specification and drawing(s) against the as fitted structural arrangement.
- 6.4.2** The Contractor must afford the TA the opportunity to inspect each item in Annex 6 following completion of the strip out.
- 6.4.3** The Contractor must afford the TA and the attending TCMS Surveyor the opportunity to inspect each item in Annex 6 following completion of the repair.
- 6.4.4** All welds must be inspected by a level 2 certified dye penetrant NDT inspector in accordance with Annex 6.
- 6.4.5** The Contractor must afford the TA and the attending TCMS Surveyor the opportunity to witness NDT testing of all welded repairs in accordance with Annex 6.

6.5 Deliverable

- 6.5.1** Prior to the start of work, the Contractor must provide to the TA proof of valid CWB certification for all personnel involved in welding by MIG on 5083 grade aluminum plate and 6082 grade aluminum extrusions measuring 2 mm thick and greater.
- 6.5.2** Prior to the start of work, the Contractor must provide to the TA proof of the NDT inspector's valid level 2 NDT certification for dye penetrant testing.

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6.5.3 Prior to the start of work, the Contractor must provide to the TA the make and model # of the modern synergic welding machine(s) to be used for all welding requirements in section 6 of this specification.

6.5.4 Prior to the close of contract, the Contractor must provide to the TA a revised copy of the associated ACV structural drawings clearly indicating all modifications made to the ACV structure and resulting from all work carried out in section 6 of this specification.

6a Exterior Hull Coating

6a.1 Identification

6a.1.1 The Contractor must replace all of the existing ACV exterior hull, deck and cabin coatings including all ACV lettering & labeling using CSM coatings as specified in Annex 6a.A.

6a.2 References

Titre/Title	No. du dessin/Drg. No.	Emplacement/Locatio n
Manufacturer's Coating Specification		Annex 6a.A
Coating Product Data Sheet		Annex 6a.B
Coating Material Safety Data Sheet		Annex 6a.C
GA External Paint Scheme	WAP1-88-00-4002	Annex 6a.D
GA Of Craft Lettering & Labelling	WAP1-88-00-4003	Annex 6a.E

6a.3 Technical

6a.3.1 The contractor must ensure the attendance of the selected paint manufacturer's representative immediately after the hull has been pressure washed and at all other times required by the paint manufacturer to ensure proper application of coatings.

6a.3.2 The paint manufacturer's representative must oversee the work carried out to ensure that all preparation and application procedures meet product criteria. The paint manufacturer must furnish the owner with a written report upon completion of the application procedures, detailing any instances in which the quality of work done may have fallen below manufacturer's specifications and the measures taken to correct these shortcomings.

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- 6a.3.3** Prior to the surface preparation and recoating process and in accordance with section 6a1 of this specification, the Contractor must remove all obstructions affecting the recoating of all ACV surfaces identified in Annex 6a.A of this specification.
- 6a.3.4** The Contractor must record the location and configuration of all removed items such that their reinstallation will be as per original. All removed equipment and fixtures must be carefully stowed in order to be protected against damage and not to obstruct all work in this specification
- 6a.3.5** All existing defects or abnormalities to the ACV or to the items being removed and discovered during the removal process must be immediately reported to the TA for corrective action in accordance with section 6a1 of this specification.
- 6a.3.6** All threaded holes and surfaces exposed by the removal of items in section 6a1 of this specification must be protected from damage resulting from the surface preparation and recoating process.
- 6a.3.7** All systems or parts thereof identified for removal must be drained as necessary, isolated and secured in accordance with section 6a1 of this specification and in order to protect against fluid spills and electrical hazards.
- 6a.3.8** All non-removable items not identified in Annex 6a.A for recoating must be protected against damage from the surface preparation and recoating process. All materials used to protect items not identified in Annex 6a.A for recoating, must be removed at completion of the recoating process. All damage resulting from blasting grit and/or paint overspray must be corrected by the Contractor at the Contractor's expense prior to the completion of the contract.
- 6a.3.9** In accordance with section 6 of this specification, the control cabin and lower cabin areas must be protected against the ingress of blasting grit and/or overspray. All openings must be sealed or closed off to prevent the ingress of blasting grit and/or overspray. The Contractor must be responsible for the cleanup of all blasting grit, debris and overspray from the vessel's interior and exterior surfaces.
- 6a.3.10** In accordance with section 6 of this specification, all scuttles, port holes, port and starboard bowthruster nozzle bearing ring and windows must be protected from blasting grit and new coating.
- 6a.3.11** The Contractor is to test the coatings before work starts.
- 6a.3.12** Parts of the ACV's existing protective coating pigmentation may contain traces of lead. The Contractor must exercise all necessary precautions consistent with applicable CLC safety regulations and applicable Federal, Provincial, and Municipal environmental regulations during the removal of all ACV existing protective coatings.
- 6a.3.13** In accordance with Annex 6a.A and 6a.B, the Contractor must completely remove all protective coatings presently existing on all ACV external surfaces identified for recoating in Annex 6a.A.

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- 6a.3.14** Unless otherwise stated, all non-removable painted items must have their surfaces prepared for recoating in accordance with Annex 6a.A and 6a.B of this specification.
- 6a.3.15** Unless otherwise stated, all items identified for removal in section 6a1 of this specification and having a protective coating must have their external surfaces prepared for recoating in accordance with manufacturer's new coating specifications.
- 6a.3.16** The Contractor must obtain a substrate profile consistent with Annexes 6a.A and 6a.B on all surfaces identified in Annex 6a.A for recoating.
- 6a.3.17** All blasting grit and debris must be contained and disposed of according to applicable Federal, Provincial, and Municipal regulations.
- 6a.3.18** All coatings must be applied within the scheduled period such that the newly applied coating is thoroughly cured prior to the ACV's return to service. Any substandard coating application that is inconsistent with Annexes 6a.A and 6a.B, must be removed and reapplied in accordance with Annexes 6a.A and 6a.B at the Contractor's expense.
- 6a.3.19** The Contractor must apply the new coating system to the ACV's external surfaces in accordance with Annexes 6a.A and 6a.B using CSM coatings as specified in Annex 6a.A . All coating application parameters as described in Annexes 6a.A and 6a.B must be recorded at the time of application and submitted to the TA.
- 6a.3.20** Following the curing of all applied coatings, the Contractor must apply all lettering and labelling to the ACV's structure in accordance with Annex 6a.E. Unless otherwise stated, all items identified in 6a1.3.14 and 6a1.3.15 must have their prepared surfaces recoated in accordance with Annex 6a.A.
- 6a.3.21** At the completion of all work associated to identified areas and the thorough curing of all recoated surfaces, all removed equipment, systems, appliances and fixtures must be reinstalled as per original and in accordance with manufacturer's specifications using new CSM cadmium plated fasteners, isolators, gaskets and seals where applicable. All installation settings and adjustments as applicable must be recorded.

6a.4 Proof of Performance

- 6a.4.1** The Contractor is to provide a NACE certified person to supervise all prep and painting activities.
- 6a.4.2** The coating manufacturer's FSR must have unfettered access to the entire coating application process.
- 6a.4.3** The Contractor must afford the FSR and the TA the opportunity to verify that all prepared surfaces are in accordance with the coating manufacturer's specifications prior to coating application.
- 6a.4.4** The Contractor must afford the FSR and the TA the opportunity to inspect the coating application process.

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6a.4.5 Following the reinstallation of all removed items, the Contractor must afford the TA the opportunity to witness a comprehensive functionality test of all systems and equipment disturbed during the course of work related to this contract. All defects resulting from contractual work must be corrected at the Contractor's expense prior to the close of contract.

6a.5 Deliverables

Prior to the close of contract, the Contractor must submit all required documentation to the TA including all defect reports, coating application reports and hazardous materials disposal certificates in accordance with section 2 of this specification.

6a1 Exterior Equipment Removal

6a1.1 Identification

6a1.1.1 In preparation for all other work included in this specification, the Contractor must remove and store all exterior mounted items identified in section 6a1 of this specification.

6a1.2 References

Titre/Title	No. du dessin/Drg. No.	Emplacement/Location
ACV Sipu Muin – Maintenance Manual General	SP 7134 Book1	Annex 2A
ACV Sipu Muin – Maintenance Manual Electrical	SP 7134 Book 2	Annex 2B
ACV Sipu Muin – Maintenance Manual Illustrations	SP 7134 Book 3	Annex 2C
General Arrangement Structure Sheets 1-4	WAP1-88-H-4001	Annex 6a1.A

6a1.3 Technical

6a1.3.1 The nomenclature used for locating all items identified for removal must be consistent with Annex 6a1.A.

6a1.3.2 All removed items must be stored in accordance with manufacturer's specifications for long term storage in order to avoid damage, corrosion and the ingress of contaminants.

6a1.3.3 All non-removable items or parts thereof must be protected in order to avoid all damage from the surface preparation and recoating process.

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- 6a1.3.4** Where guidance is required for the removal of complex equipment and systems, the Contractor must consult with the TA for expertise, Annex 2A and manufacturer's specifications as applicable.
- 6a1.3.5** Prior to commencing removal, all equipment and systems identified for removal must be LOTO.
- 6a1.3.6** Prior to commencing removals, the location and configuration of all equipment, systems, appliances and fixtures identified for removal are to be recorded in order to facilitate their reinstallation as per original.
- 6a1.3.7** All removed items must be carefully stored until reinstallation in order to be protected against damage and corrosion and not to obstruct all other work included in this specification.
- 6a1.3.8** All existing defects exposed during the course of removals must be recorded and immediately brought to the attention of the TA for corrective action.
- 6a1.3.9** All damage to removed items and the ACV structure and resulting from work carried out in this specification must be repaired at the Contractor's expense prior to the close of contract.
- 6a1.3.10** All piping systems containing fluid must be adequately drained and isolated prior to their disconnection and remaining pipe work capped or plugged in order to avoid all leakage and spills.
- 6a1.3.11** All fluids and other hazardous materials recovered during all work carried out in this specification must be disposed of in accordance with applicable environmental regulations.
- 6a1.3.12** All electrical cables, conduits, piping and other external surface protrusions resulting from equipment removal must to the greatest extent possible be retracted inside the ACV's structure. The resulting perforations must be plugged in order to prevent the ingress of all contaminants caused by the surface preparation and recoating process.
- 6a1.3.13** All hatch and fan intake openings resulting from the removal of hatch covers, debris guards and gratings must be sealed in order to protect the internal spaces from all ingress of contaminants caused by the surface preparation and recoating process.
- 6a1.3.14** All sealant/caulking and other adhesives remaining on all ACV external surfaces identified for recoating must be thoroughly removed.
- 6a1.3.15** All non-removable items such as windows, bulkhead protrusions, welded fixtures, threaded holes and studs etc. must be protected such as not to be damaged or affected by the surface preparation and recoating process.
- 6a1.3.16** Unless otherwise stated, all external cable and piping runs including protective guards, trays and fasteners must be removed.

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- 6a1.3.17** The Contractor must disconnect and remove all of the equipment, systems, appliances and fixtures fitted to the control cabin top (29 Annex 6a1.A).
- 6a1.3.18** The Contractor must disconnect and remove all of the equipment, systems, appliances and fixtures fitted to the external surfaces of the forward, aft, port and starboard control cabin bulkheads (29 Annex 6a1.A).
- 6a1.3.19** The Contractor must disconnect and remove all of the equipment, systems, appliances and fixtures fitted to the cabin roof (20 Annex 6a1.A) including the mast assembly and the Eberspacher space heater.
- 6a1.3.20** The Contractor must disconnect and remove all of the equipment, systems, appliances and fixtures fitted to the external surfaces of the cabin front bulkhead (18 Bhd. Fr. 7.1 Annex 6a1.A). The Contractor must disconnect and remove all of the equipment, systems, appliances and fixtures fitted to the external surfaces of the port and starboard cabin bulkheads (19 Annex 6a1.A).
- 6a1.3.21** The Contractor must disconnect and remove all of the equipment, systems, appliances and fixtures fitted to the external surfaces of the port and starboard cabin bulkheads (19 Annex 6a1.A).
- 6a1.3.22** The Contractor must disconnect and remove all of the equipment, systems, appliances and fixtures fitted to the external surfaces of the propulsion bay end bulkhead (17 Fr. 15 Annex 6a1.A).
- 6a1.3.23** The Contractor must remove all items fitted to the external surfaces of the bow structure (14 Fwd. of Fr. 3 Annex 6a1.A) including the port and starboard roller boom installations (51 Annex 6a1.A), the ramp installation (92 Annex 6a1.A), the roller fairleads and bollards (55 Annex 6a1.A) bow deck access hatches (59 Annex 6a1.A).
- 6a1.3.24** The Contractor must remove the port and starboard forward intake debris guards (88, 89 Annex 6a1.A).
- 6a1.3.25** The Contractor must remove all items fitted to the external surfaces of the port and starboard side decks (27 Annex 6a1.A) including all lift engine hatch covers (39, 40 Annex 6a1.A), radiator bay hatch covers (45 Annex 6a1.A), and all gratings fitted to all fan intakes.
- 6a1.3.26** The Contractor must disconnect and remove all of the equipment, systems, appliances and fixtures fitted to the external surfaces of the port and starboard well deck sides (19 Annex 6a1.A) including all piping guard panels and fuel transfer system piping.
- 6a1.3.27** The Contractor must remove the forward and aft port and starboard fenders fitted to the ACV's side skin (24 Annex 6a1.A).
- 6a1.3.28** The Contractor must disconnect and remove all of the equipment, systems and fixtures fitted to the external surfaces of the well deck (11 Annex 6a1.A) including the crane, crane base and all associated electrical and hydraulic systems.

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6a1.3.29 The Contractor must disconnect and remove all of the equipment, systems, appliances and fixtures fitted to the aft side decks (13 Annex 6a1.A) including the auxiliary power unit (APU) mounted on the starboard side and the port and starboard life rafts and their respective racks. Life rafts shall be prepared for shipping to a CCG facility as arranged by the TA.

6a1.3.30 The Contractor must disconnect and remove all of the equipment, systems and fixtures fitted to the aft deck (13 Annex 6a1.A) including the port and starboard steering systems, the port and starboard rudder assemblies, the port and starboard propeller shafts (as described in section 12 of this specification). The port and starboard propeller assemblies shall be removed by CCG personnel and the port and starboard propeller ducts must remain installed and intact.

6a1.3.31 At the completion of all work associated to identified areas and the thorough curing of all recoated surfaces, all removed equipment, systems, appliances and fixtures must be reinstalled as per original and in accordance with manufacturer's specifications using new CSM cadmium plated fasteners, isolators, gaskets and seals where applicable. All installation settings and adjustments as applicable must be recorded.

6a1.3.32 The contractor is responsible to replace all signage and decals removed during the painting process. The contractor is to verify with digital photos that the signage is correct.

6a1.4 Proof of Performance

6a1.4.1 Upon completion of all removals, the Contractor must afford the TA the opportunity to inspect all areas where removed items have been stored.

6a1.4.2 Prior to the surface preparation and coating process, the Contractor must afford the TA the opportunity to inspect all areas where removals have taken place.

6a1.4.3 Following the reinstallation of all removed items, the Contractor must afford the TA the opportunity to witness a comprehensive functionality test of all systems and equipment disturbed during the course of work related to this contract. All defects resulting from contractual work must be corrected at the Contractor's expense prior to the close of contract.

6a1.5 Deliverables

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6a1.5.1 Prior to the close of contract, the Contractor must submit to the TA a detailed report of all defects revealed during or resulting from work carried out in section 6a1 of this specification.

6b Interior Hull Cleaning

6b.1 Identification

6b.1.1 The Contractor must recoat the internal surfaces of the port and starboard lift engine bays, lift engine radiator bays, lift and bow thruster transmission and fan bays and the propulsion engine bays using CSM coatings as specified in Annex 6a.A.

6b.2 Reference

Titre/Title	No. du dessin/Drg. No.	Emplacement/Locatio n
Manufacturer's Coating Specification		Annex 6a.A
Coating Product Data Sheet		Annex 6a.B
Coating Material Safety Data Sheet		Annex 6a.C
GA of Craft For CCG – 400 Series	WAP1-88-00-4001	Annex 6b.D
Fire Insulation Propulsion Engine Bay	WAP1-88-50-4066	Annex 6b.B
Fire Insulation Lift Engine Bay	WAP1-88-50-4067	Annex 6b.C

6b.3 Technical

6b.3.1 The entire recoating process shall be supervised by a certified FSR.

6b.3.2 The Contractor must refer to sections 6c, 12 and 13 for the removal of lift and propulsion engines, propulsion transmission assemblies and lift and bow thruster fan transmission assemblies.

6b.3.3 Prior to the surface preparation and recoating process, the Contractor must remove all obstructions affecting the recoating of all internal structural surfaces of the port and starboard lift engine bays, lift engine radiator bays, lift and bow thruster transmission and fan bays and the propulsion engine bays.

6b.3.4 Prior to the start of work inside the engine bays, the ACV aerosol based fire suppression system shall be LOTO and all engine space aerosol generators shall be disconnected, removed and carefully stored in accordance with manufacturer's specifications for long term storage such that they are protected until reinstallation against damage, corrosion or the ingress of contaminants.

6b.3.5 The Contractor must record the location and configuration of all removed items such that their reinstallation will be as per original. All removed equipment, appliances,

systems and fixtures must be carefully stowed in order to be protected against damage and not to obstruct all work in this specification.

- 6b.3.6** Prior to the start of work inside the engine bays, the ACV aerosol based fire suppression system must be LOTO and all engine space aerosol generators must be disconnected, removed and carefully stored in accordance with manufacturer's specifications for long term storage such that they are protected until reinstallation against damage, corrosion or the ingress of contaminants.
- 6b.3.7** All existing defects or abnormalities to the ACV or to the items being removed and discovered during the removal process must be immediately reported to the TA for corrective action.
- 6b.3.8** All threaded holes and surfaces exposed by the removal of equipment, appliances, systems and fixtures must be protected from damage resulting from the surface preparation and recoating process.
- 6b.3.9** All equipment and systems or parts thereof identified for removal must be drained as necessary, isolated and secured in order to protect against fluid spills and electrical hazards.
- 6b.3.10** All non-removable items not identified for recoating must be protected against damage from the surface preparation and recoating process. All materials used to protect items not identified for recoating, must be removed at completion of the recoating process. All damage resulting from blasting grit and/or paint overspray must be corrected by the Contractor at the Contractor's expense prior to the completion of the contract.
- 6b.3.11** The control cabin and lower cabin areas must be protected against the ingress of blasting grit and/or overspray. All openings must be sealed or closed off to prevent the ingress of blasting grit and/or overspray. The Contractor must be responsible for the cleanup of all blasting grit, debris and overspray from the vessel's interior and exterior surfaces.
- 6b.3.12** All scuttles, port holes and windows must be protected from blasting grit and new coating.
- 6b.3.13** Parts of the ACV's existing protective coating pigmentation may contain traces of lead. The Contractor must exercise all necessary precautions consistent with applicable CLC safety regulations and applicable Federal, Provincial, and Municipal environmental regulations during the removal of all ACV existing protective coatings.
- 6b.3.14** In accordance with Annex 6a.A and 6a.B, the Contractor must completely remove all protective coatings presently existing on all ACV internal surfaces of the port and starboard lift engine bays, lift engine radiator bays, lift and bow thruster transmission and fan bays and the propulsion engine bays in accordance with section 6c, 12 and 13.

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- 6b.3.15** Unless otherwise stated, all non-removable painted items must have their surfaces prepared for recoating in accordance with Annex 6a.A of this specification.
- 6b.3.16** Unless otherwise stated, all items identified for removal and having a protective coating must have their external surfaces prepared for recoating in accordance with manufacturer's new coating specifications.
- 6b.3.17** The Contractor must obtain a substrate profile consistent with Annexes 6a.A and 6a.B on all surfaces identified for recoating.
- 6b.3.18** All blasting grit and debris must be contained and disposed of according to applicable Federal, Provincial, and Municipal regulations.
- 6b.3.19** All coatings must be applied within the scheduled period such that the newly applied coating is thoroughly cured prior to the reinstallation of all removed items. Any substandard coating application that is inconsistent with Annexes 6a.B, must be removed and reapplied in accordance with Annexes 6b.B at the Contractor's expense.
- 6b.3.20** The Contractor must apply the new coating system to the internal surfaces of the port and starboard lift engine bays, lift engine radiator bays, lift and bow thruster transmission and fan bays and the propulsion engine bays in accordance with Annexes 6a.A and 6a.B. All coating application parameters as described in Annexes 6a.A and 6a.B must be recorded at the time of application and submitted to the TA.
- 6b.3.21** Unless otherwise stated, all items identified in 6b.3.15 and 6b.3.16 must have their prepared surfaces recoated in accordance with Annex 6a.A.
- 6b.3.22** At the completion of all work associated to identified areas and the thorough curing of all recoated surfaces, all removed equipment, systems, appliances and fixtures must be reinstalled as per original and in accordance with manufacturer's specifications using new CSM cadmium plated fasteners, isolators, gaskets and seals where applicable. All installation settings and adjustments as applicable must be recorded.

6b.4 Proof of Performance

- 6b.4.1** The coating manufacturer's FSR must have unfettered access to the entire coating application process.
- 6b.4.2** The Contractor must afford the FSR and the TA the opportunity to verify that all prepared surfaces are in accordance with the coating manufacturer's specifications prior to coating application.
- 6b.4.3** The Contractor must afford the FSR and the TA the opportunity to inspect the coating application process.
- 6b.4.4** Following the reinstallation of all removed items, the Contractor must afford the TA the opportunity to witness a comprehensive functionality test of all systems and equipment disturbed during the course of work related to this contract. All defects

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resulting from contractual work must be corrected at the Contractor's expense prior to the close of contract.

6b.5 Deliverables

6b.5.1 Prior to the close of contract, the Contractor must submit all requested documentation to the TA including all defect reports, coating application reports and hazardous materials disposal certificates in accordance with section 2 of this specification.

6c Engine Removal and Reinstallation

6c.1 Identification

6c.1.1 The port and starboard propulsion engines, lift engines and associated radiators must be removed from their respective bays for the duration of all work performed inside the bays. All engines must be reinstalled as per original prior to the close of contract.

6c.2 References

Titre/Title	No. d'identification / Identification No.	Emplacement / Location
Propulsion Engine Installation	WAP1-88-50-4003	Annex 6c.A
G.A. Lift Engine Installation	WAP1-88-50-4005/6	Annex 6c.B
Engine Removal and Installation	SP 7134 Sect 2 Chap 7	Annex 6c.C
Propulsion Transmission Assembly	WAP1-88-68-4002	Annex 6c.D
Caterpillar Maintenance & Parts Manuals	Model No. 3412E	Consult TA
Port Propulsion Engine	Serial No: 4CR00591	ACV
Starboard Propulsion Engine	Serial No: 4CR00587	ACV
Port Lift Engine	Serial No: BDT00481	ACV
Starboard Lift Engine	Serial No: 4CR00592	ACV

6c.3 Technical

6c.3.1 Prior to commencing removal, all equipment and systems identified for removal shall be LOTO.

6c.3.2 Prior to commencing removals, the location and configuration of all equipment, systems, appliances and fixtures identified for removal are to be recorded in order to facilitate their reinstallation as per original.

6c.3.3 Prior to the start of work inside the engine bays, the ACV aerosol based fire suppression system must be LOTO and all engine space aerosol generators must be disconnected,

removed and carefully stored in accordance with manufacturer's specifications for long term storage such that they are protected until reinstallation against damage, corrosion or the ingress of contaminants.

- 6c.3.4** The port and starboard propulsion transmission assemblies must be removed in accordance with section 6c of this specification prior to the removal of the port and starboard propulsion engines.
- 6c.3.5** The port and starboard propulsion engines, lift engines and radiators must be completely disconnected of all associated piping, electrical cables and control cables as required to prepare for removal.
- 6c.3.6** Once completely disconnected of all auxiliary systems, all four engines, respective cooling fans and radiators must be removed from their respective engine bays in consultation with the ACV manufacturer's specifications as described in Annexes 6c.A, 6c.B and 6c.C
- 6c.3.7** The contractor is to mark the location and thickness of all shims fitted and is responsible to set the alignment of all equipment during re-installation.
- 6c.3.8** To the greatest extent possible, all four engines and associated equipment must remain as in intact as possible during their removal and must remain so during the storage period until reinstallation into their respective engine bays.
- 6c.3.9** The four removed engines and associated equipment must be stored in accordance with the engine manufacturer's recommendations in order to avoid all possible damage resulting from long term storage.
- 6c.3.10** In order to protect against corrosion, all engine jacket water cooling passages must remain filled with treated coolant for the duration of the contract.
- 6c.3.11** All cooling fans and radiator assemblies must be thoroughly cleaned and inspected on the interior and exterior for defects.
- 6c.3.12** All other removed items must be carefully stowed until reinstallation in order to be protected against contaminants, damage and corrosion and not to obstruct all other work included in this specification.
- 6c.3.13** All existing defects exposed during the course of removals must be recorded and immediately brought to the attention of the TA for corrective action.
- 6c.3.14** All damage to removed items and/or the ACV structure and resulting from work carried out in this specification must be repaired at the Contractor's expense prior to the close of contract.
- 6c.3.15** All piping systems containing fluid must be adequately drained and isolated prior to their disconnection and remaining pipe work capped or plugged in order to avoid all leakage and spills and the ingress of contaminants.

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- 6c.3.16** All fluids and other hazardous materials recovered during all work carried out in this specification must be disposed of in accordance with applicable environmental regulations.
- 6c.3.17** All electrical cables, conduits, piping and other external surface protrusions resulting from equipment removal must be protected against damage and corrosion and to the greatest extent possible, must not obstruct all other work in this specification.
- 6c.3.18** All resulting perforations must be temporarily sealed in order to prevent the ingress of all contaminants caused by the surface preparation and recoating process of engine bay internal surfaces.
- 6c.3.19** At the completion of all work associated to all engine and radiator bays and the thorough curing of all recoated surfaces, all engines, radiators and associated equipment and systems must be reinstalled in their respective bays as per original and in accordance with manufacturer's specifications and in consultation with the TA and annexes 6c.A to 6c.D using new CSM OEM cadmium plated fasteners, isolators, gaskets and seals where applicable. All installation settings and adjustments as applicable must be recorded.
- 6c.3.20** All system fluids must be replenished to operating levels using CSM manufacturer's recommended fluids in consultation with the TA to ensure compatibility with original fluids.
- 6c.3.21** A full functionality test run on all four engines ranging from idle to full load in accordance with manufacturer's specifications and with the CG Hovercraft Engineers for a minimum 30 minute period per engine, must be performed prior to the close of contract.

6c.4 Proof of Performance

- 6c.4.1** Upon completion of all engine removals, the Contractor must afford the TA the opportunity to inspect all areas where engines and other removed items have been stored.
- 6c.4.2** Prior to the surface preparation and coating process, the Contractor must afford the TA and the attending TCMS surveyor the opportunity to inspect all four engine bays.
- 6c.4.3** Prior to reinstallation of all four engines, the Contractor must afford the TA and the attending TCMS surveyor the opportunity to inspect all four engine bays.
- 6c.4.4** Prior to the test run of all four engines, the Contractor must afford the TA the opportunity to inspect all four engine installations.
- 6c.4.5** Following the complete reinstallation of all four engines and associated equipment, the Contractor must afford the TA and the attending TCMS surveyor the opportunity to

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witness a full operational test of all four engines and engine alarms in accordance with the engine manufacturer's specifications.

6c.5 Deliverables

6c.5.1 In agreement with the TA as far as time frame, the Contractor must submit to the TA a detailed report of all defects revealed during or resulting from work carried out in section 6c of this specification.

6c.5.2 Prior to the close of contract, the Contractor must submit to the TA a detailed test run report of all four engines including all operational parameters and other findings recorded for the duration of the test run.

6d Watertight Areas

6d.1 Identification

6d.1.1 The Contractor must open and clean to bare metal all internal surfaces of all watertight areas identified in Annex 6d.A 267-6.0.1.

6d.2 References

Titre/Title	No. du dessin/Drg. No.	Emplacement/Locatio n
General Arrangement Structure	WAP1-88-H-4001	Annex 6d.A 267-6.0.1

6d.3 Technical

6d.3.1 All watertight areas must be made and maintained safe for entry for the duration of work in section 6 of this Specification in strict accordance with the CLC. This includes opening, ventilation, testing, gas-freeing and maintaining conditions and permits safe for entry and safe for hot work as applicable for the duration of this contract.

6d.3.2 All hazardous waste material must be disposed of in accordance with all applicable environmental regulations. Hazardous waste disposal certificates must be submitted to the TA prior to the close of contract.

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- 6d.3.3** Prior to entry into watertight areas all systems servicing the watertight areas as applicable are LOTO for the duration of all work in section 6 of this specification.
- 6d.3.4** Prior to removal, all watertight area manhole covers must be identified according to their respective spaces and orientation in order to facilitate their reinstallation as per original.
- 6d.3.5** All watertight area manhole covers must be removed, cleaned and thoroughly inspected. All defects must be immediately reported to the TA for corrective action. All covers must be carefully stowed when not in use in order to avoid all damage and to minimize interference with all other work in this specification.
- 6d.3.6** All watertight area internal surfaces must be cleaned to bare metal including the removal of all sealant/caulking in accordance with Annex 6d.A 267-6.0.1. All defects observed during the cleaning process must be immediately reported to the TA for corrective action.
- 6d.3.7** Following all cleaning and the removal of all sealant/caulking in accordance with Annex 6d.A 267-6.0.1, all outboard port and starboard watertight areas located between frames 7.1 and 9 must be thoroughly inspected for defects. All findings must be recorded and immediately reported to the TA for corrective action.
- 6d.3.8** Following TCMS inspection and approval of all watertight areas, all internal surfaces must be prepared and recoated with CSM CRC SP-400 in accordance with the coating manufacturer's specifications.
- 6d.3.9** Following all work to the internal surfaces of all void spaces, all manhole covers must be reinstalled as per original using CFM new fasteners and GSM new gaskets of grade equivalent to original.
- 6d.3.10** Following reinstallation of all manhole covers, all LOTO measures taken for work performed in section 6 of this specification must be removed.

6d.4 Proof of Performance

- 6d.4.1** The Contractor must afford the TA the opportunity to inspect all watertight areas following the cleaning and removal of all sealant/caulking of all internal surfaces.
- 6d.4.2** The Contractor must afford the TA and the attending TCMS surveyor the opportunity to inspect all watertight areas following all repairs.
- 6d.4.3** The Contractor must afford the TA the opportunity to inspect all watertight areas following the recoating of all internal surfaces.

6d.5 Deliverables

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6d.5.1 Prior to the close of contract, all requested documentation must be submitted to the TA including all findings, test reports, confined space entry certificates and hazardous materials disposal certificates.

6e Engine Bay Hatch Covers

6e.1 Identification

6e.1.1 The Contractor must replace all existing engine and radiator bay hatch covers with new CFM supplied material hatch covers. The Contractor is to transfer existing hardware from old hatches to new hatches.

6e.2 References

Titre/Title	No. du dessin/Drg. No.	Emplacement/Location
Lift Engine Hatch Unit No. 39	WAP1-88-H-4049-50	Annex 6e.A
Propulsion Engine Bay Hatch Unit No. 21	WAP1-88-H-4051-2	Annex 6e.B
Access Panel to Radiator Bay Unit No. 39	WAP1-88-H-4055	Annex 6e.C
Coating Specifications		Annex 6a.A

6e.3 Technical

6e.3.1 All removed equipment as a result of this specification must remain the property of the CCG unless otherwise specified.

6e.3.2 The Contractor must disconnect and remove the six (6) engine bay hatch covers and the two (2) lift engine radiator bay hatch covers from the ACV.

6e.3.3 The Contractor must remove and visually inspect all hardware from the removed hatch covers. All defective hardware must be identified, recorded and a list of same submitted to the TA for replacement.

6e.3.4 The Contractor must fabricate four (4) lift engine bay hatch covers in accordance with Annex 6.8A and where necessary, using as a guide the existing hatch covers. All materials used in the fabrication of the hatch covers must be new CSM.

6e.3.5 The Contractor must fabricate two (2) propulsion engine bay hatch covers in accordance with Annex 6e.B and where necessary, using as a guide the existing hatch covers. All materials used in the fabrication of the hatch covers must be new CSM.

6e.3.6 The Contractor must fabricate two (2) lift engine radiator bay hatch covers in accordance with Annex 6e.C and where necessary, using as a guide the existing hatch covers. All materials used in the fabrication of the hatch covers must be new CSM.

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- 6e.3.7** All hatch cover surfaces must be prepared for coating in accordance with the coating manufacturer's specifications as identified in Annex 6a.A.
- 6e.3.8** All hatch cover surfaces must be primed and coated in accordance with the coating manufacturer's specifications as identified in Annex 6a.A.
- 6e.3.9** All existing hardware deemed suitable for reuse and all new GSM replacement hardware must be installed on their new respective hatches.
- 6e.3.10** The Contractor must supply and install new gasket material and adhesive to all hatch cover seal channels in accordance with Annexes 6e.A, 6e.B and 6e.C.
- 6e.3.11** The Contractor must install the new hatch covers to their respective compartments. All covers must be fitted in place and all hatch cover hardware must be adjusted to provide a water tight seal in the closed hatch position for the entire perimeter of each hatch.
- 6e.3.12** The Contractor must install all gas springs to their respective hatches in accordance with 6e.A and 6e.B of the manufacturer's specifications thereby providing smooth, controlled, opening and closing of all hatch covers.

6e.4 Proof of Performance

- 6e.4.1** The Contractor must afford the Project Officer (PO) and the TA the opportunity to visually inspect all new hatch covers prior to coating.
- 6e.4.2** The Contractor must afford the PO and the TA the opportunity to inspect all new hatch covers following coating and prior to the installation of insulation blankets and seals.
- 6e.4.3** The Contractor must afford the PO and the TA the opportunity to witness a cover seal chalk inspection and water tight integrity test on the perimeter of all newly installed hatch covers using a standard marine hose test. All lack of seal contact must be corrected and hatch cover leakage must be repaired prior to the close of contract.
- 6e.4.4** The Contractor must afford the project officer the opportunity to witness a full functionality test of all newly installed hatch covers.

6e.5 Deliverables

- 6e.5.1** The Contractor must provide Test and Trial reports to the TA in accordance with the documentation section of the General Notes.

6f Skirt Replacement

6f.1 Identification

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6f.1.1 The Contractor must replace the complete existing skirt assembly with a new GSM skirt assembly.

6f.1.2 All removed equipment as a result of this specification must remain the property of the CCG unless otherwise specified.

6f.2 References

Titre/Title	No. du dessin/Drg. No.	Emplacement/Locatio n
Skirt Assembly Drawings	WAP1-88-B-4001 to HTWAP1-88-B-4613	Annex 6f.A

Description	Make/Model #/Part #
Skirt Hinge Pins	4 mm x 1.4 m
Skirt Hinge Pins	6 mm x 1.4 m
Nylon Cone Plate Doubler	B401103C1
Washer Plate	B401101B1
¼ inch Aluminum Matlock Pins	RM1820
Complete Skirt Assembly	

6f.3 Technical

6f.3.1 Under the strict guidance of the PO, the Contractor must remove the entire existing skirt assembly as illustrated in Annex 6f.A and 6f.B.

6f.3.2 The Contractor must exercise all necessary precautions during removal of the skirt assembly in order to avoid all damage to the ACV and the existing skirt assembly. All damage occurring to the ACV and reusable skirt components must be repaired at the Contractor's expense.

6f.3.3 In consultation with the PO, the Contractor must distinguish and document the reusable skirting components from the disposable components. All non-reusable components must be returned to the CCGB Trois-Rivière.

6f.3.4 All reusable skirting components must be securely stowed in an orderly fashion on CSM pallets in order to avoid all damage and to facilitate transportation as arranged by the TA, to a CCG facility.

6f.3.5 The Contractor must consult with the PO on the use of GSM special tools required for the removal of the skirting assembly. All GSM special tools must be on temporary loan and must be returned to the PO in their original condition upon completion of all work in section 6f of this specification. All damaged and lost GSM special tools must be compensated for at the Contractor's expense.

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6f.3.6 In accordance with the Contractor's project work schedule and Annex 6f.A, 6f.B and under the strict guidance of the PO, the Contractor must install the new GSM skirting assembly on the ACV's structure.

6f.3.7 All manufacturer's defects or other abnormalities related to the reinstallation of the new skirting assembly must be immediately brought to the PO and TA's attention for swift resolution.

6f.4 Proof of Performance

6f.4.1 Upon removal of the complete existing skirting assembly, the Contractor must afford the TA and the PO the opportunity to inspect the ACV's hull and structure including all skirting attachment points.

6f.4.2 Following the stowage of all reusable existing skirting components and prior to shipment, the Contractor must afford the TA and the PO the opportunity to inspect the packaged equipment.

6f.4.3 During the installation of the new skirting assembly, the Contractor must afford the TA and the PO the opportunity to inspect each individual phase of the skirting installation.

6f.5 Deliverables

6f.5.1 Prior to the shipping of all used skirting components, a complete list of same must be submitted to the TA in accordance with section 2 of this specification.

6g ESCALIERS COMPARTIMENTS D'ASPIRATION VENTILATEURS/ FAN INTAKE BAY STAIRS

6g.1 Identification

6g.1.1 The Contractor shall fabricate and install fan bay access stairs to the inside of all four port and all four starboard fan bays.

6g.2 References

Titre/Title	No. du dessin/Drg. No.	Emplacement/Locatio n
Sample Step		TA
Stair Photos		Annex 6g.A

6g.3 Technical

6g.3.1 The TA shall supply the Contractor with a sample step to be used as a guide in the fabrication of fan bay stairs.

6g.3.2 All materials required for the fabrication and installation of the steps shall be CSM.

6g.3.3 The plating material used for step fabrication shall be the same as used for the fabrication of the sample step. All fasteners used for the installation of all steps shall be CSM cadmium coated.

6g.3.4 Prior to the start of step fabrication, the Contractor shall verify all step and fan bay measurements to ensure a proper fit.

6g.3.5 All fan bay steps shall be coated in accordance with the procedures detailed in section 6a.A of this specification.

6g.3.6 The top surface of each step shall be coated with a yellow non slip coating similar in color to the coating applied on the sample step.

6g.3.7 Installation of the fan bay steps shall be carried out in consultation with the TA and shall be consistent with the sample photos included in Annex 6g.A.

6g.3.8 The Contractor shall fabricate and install 3 steps per fan bay in the four port fan intake bays and the four starboard fan intake bays similar to the installation illustrated in Annex 6.7A.

6g.4 Proof of Performance

6g.4.1 Following the completion of all work in this section, the Contractor shall afford the TA the opportunity to inspect the installation of all fan bay steps.

6g.5 Deliverables

6g.5.1 The Contractor shall supply and install a total of 24 fan bay access steps.

6h Fuel Bladder Replacement

6h.1 Identification

6h.1.1 All fuel tanks must be opened up, bladders removed, fuel tank bays cleaned, inspected and repaired as necessary.

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6h.2 References

Titre/Title	No. du dessin/Drg. No.	Emplacement/Locatio n
G.A. of Fuel & Ballast System	WAP1-88-57-4001	Annex 6h.A
Fuel System in Buoyancy Tank (Fwd)	WAP1-88-57-4007	Annex 6h.B
Fuel System in Buoyancy Tank (Aft)	WAP1-88-57-4008	Annex 6h.C
Fuel Contents Transmitter Assembly	WAP1-88-57-4016	Annex 6h.D
G.A. of Paneling Foam Fuel Tank Bays	HTWAP1-88-57-4715	Annex 6h.E
Fuel Bag Tank Nos. 15 & 16 Fuel System	HTWAP1-88-57-4703/4	Annex 6h.F

6h.3 Technical

- 6h.3.1** All fuel tank bays and bladders as applicable, must be made and maintained safe for entry for the duration of work in section 6h of this Specification. This includes opening, ventilation, testing, gas-freeing and maintaining conditions and permits safe for entry and safe for hot work as applicable for the duration of this contract.
- 6h.3.2** All hazardous waste material must be disposed of in accordance with all applicable environmental regulations. Hazardous waste disposal certificates must be submitted to the TA prior to the close of contract.
- 6h.3.3** Prior to entry into fuel tank bladder and bays all systems servicing these spaces such as the fuel oil transfer system and the level monitoring system are LOTO for the duration of all work in section 6h of this specification.
- 6h.3.4** The Contractor must remove all ten (10) fuel tank bay manhole covers the locations of which are identified in Annex 6h.A. Removal of the propulsion engines and their cooling radiators as described in section 6c of this specification, must take place prior to having access to the covers fitted to fuel tank bays 7 and 8 located port and starboard between frames 14A and 15..
- 6h.3.5** All covers must be cleaned and thoroughly inspected upon removal and all defects must be immediately brought to the attention of the PO. All covers must be identified to their respective tanks and carefully stowed when not in use in order to avoid all damage and not to obstruct all other work in this specification.
- 6h.3.6** All fuel level monitoring equipment fitted to the fuel tank bladder manhole covers must be disconnected, removed, cleaned, visually inspected and clearly identified for reinstallation as per original. All defects must be immediately brought to the attention of the TA. All monitoring equipment and associated wiring must be protected and carefully stowed in order to protect against all damage and not to obstruct all other work in this specification.

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- 6h.3.7** The Contractor must remove all ten (10) fuel bladder manhole covers. All covers must be cleaned and thoroughly inspected upon removal and all defects must be immediately brought to the attention of the TA. All covers must be identified to their respective tanks and carefully stowed when not in use in order to avoid all damage and not to obstruct all other work in this specification.
- 6h.3.8** The Contractor must remove all of the internal reticulated safety foam fitted inside all 10 fuel oil bladders. Prior to removal, the internal foam orientation must be carefully recorded for ease of reinstallation as per original for all fuel tanks. Residual fuel must be completely removed from the internal foam and disposed of by the contractor.
- 6h.3.9** All internal foam must be cleaned for storage and possible future disposal.. The internal foam must be carefully labelled as per location and stowed appropriately to avoid all damage and possible future disposal.
- 6h.3.10** The Contractor must remove all remaining fuel oil in all 10 fuel bladders (approximately 2000 liters) and store same in clean CSM containers. All removed fuel oil must be returned to the vessel following all work in this specification and prior to the close of contract.
- 6h.3.11** The Contractor must disconnect all fuel bladder piping connections including connections to the fuel transfer system and tank venting.
- 6h.3.12** All bladders must be clearly identified with their respective fuel tank bays and carefully removed and packaged on pallets in order to avoid all damage and to facilitate shipping. The Contractor must thoroughly clean the interior surfaces of all bladders using a mild soap solution followed by complete drying using lint free cloths and ventilation. No steaming allowed.
- 6h.3.13** The Contractor is to allow the TA to inspect the fuel bladders after cleaning. Upon acceptance, the Contractor must apply a coat of mineral oil on the inside of the fuel bladder as a preservative.
- 6h.3.14** The Contractor is to store the preserved fuel bladders until the arrival of the new fuel bladders. The fuel bladder are to be kept out of the direct sunlight at all times. Upon arrival of the new fuel bladder and internal foam, the Contractor must arrange for shipping of the used fuel bladders to Coast Guard Base in Trois-Rivières.
- 6h.3.15** Prior to the removal of all fuel tank bay lining foam, the Contractor must take representative photos of the lining foam configuration for each bay and draft a rough sketch of the bay's overall dimensions including the location of all bladder connections in order to facilitate new GSM lining foam reinstallation.
- 6h.3.16** All lining foam including the thinner strips fitted to the framing must be removed from their respective fuel tank bays and disposed of in accordance with applicable environmental regulations.
- 6h.3.17** All fuel tank bays must be thoroughly cleaned and all caulking and adhesives removed.

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- 6h.3.18** All fuel tank bays, associated piping and connections must be thoroughly inspected for defects and all findings must be documented and immediately reported to the TA for remedial action and processing as work arising.
- 6h.3.19** Following the completion of all fuel tank bay structural repairs, the Contractor must inspect the fuel tank for corrosion and report any deficiency to the TA. The Contractor must allow the TA to perform his/her own inspection. Any repairs required will be subject to the 1379 process.
- 6h.3.20** Following any repairs to the fuel tank bays, all fuel tank bays must be thoroughly dried and prepared for the installation of new GSM lining foam.
- 6h.3.21** The Contractor must cut to size and install the new GSM LD45FR Plastizote Foam (or equivalent) as per original using manufacturer recommended adhesives in all fuel tank bays in accordance with Annex 6h.E. Special attention must be given to cutting out the lining foam in way of all bladder connections and tank sump. The manufacturer recommended adhesive is to be CSM.
- 6h.3.22** Upon the completion of all lining foam installation, the Contractor must carefully reinstall all fuel bladders in their respective fuel tank bays such as not to disturb or damage the lining foam and bladder.
- 6h.3.23** All bladders must be reconnected as per original to all piping servicing the fuel tank bay bladders.
- 6h.3.24** Upon completion of all bladder connections, the Contractor must reinstall all of the original internal reticulated safety foam sections into their respective fuel bladders as per original configuration.
- 6h.3.25** All bladder manhole covers must be reinstalled to their respective bladders and all bladders must be air pressure tested to a maximum of 0.25 psi. All test findings must be documented and immediately reported to the TA.
- 6h.3.26** The Contractor must reinstall and reconnect all fuel contents transmitter assemblies to their respective fuel bladders using new CSM gaskets and seals as per original in accordance with Annex 6h.
- 6h.3.27** Upon completion of all work inside all fuel tank bays, all bay covers must be reinstalled to their respective manholes using new GSM gaskets as per original material.

6h.4 Proof of Performance

- 6h.4.1** The Contractor must afford the PO the opportunity to inspect all existing fuel bladders prior to their removal from the fuel tank bays such that a decision to repair or replace can be made.

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- 6h.4.2** The Contractor must afford the PO the opportunity to inspect all fuel tank bays following the removal of all bladders and the cleaning of all bays.
- 6h.4.3** The Contractor must afford the PO the opportunity to inspect all fuel tank bays following the completion of all structural repairs.
- 6h.4.4** The Contractor must afford the PO the opportunity to inspect all fuel contents transmitter assemblies following their removal and cleaning and prior to their reinstallation.
- 6h.4.5** The Contractor must afford the PO the opportunity to inspect the reinstallation of all lining foam inside all fuel tank bays.
- 6h.4.6** The Contractor must afford the PO the opportunity to inspect the reinstallation and reconnection of all fuel bladders inside their respective bays.
- 6h.4.7** The Contractor must afford the PO the opportunity to inspect all fuel bay and fuel bladder covers fitted with new gaskets prior to reinstallation.
- 6h.4.8** The Contractor must afford the PO the opportunity to witness the air pressure testing of all fuel bladders.
- 6h.4.9** The Contractor must afford the PO the opportunity to witness a full functionality test of all piping and level monitoring systems servicing all 8 fuel tanks prior to the close of contract.

6h.5 Deliverables

- 6h.5.1** Prior to the close of contract, the Contractor must submit all requested documentation to the TA including all findings and test reports, confined space entry certificates and hazardous materials disposal certificates in accordance with 2 of this specification.

7 CONTROL CABIN WINDOWS

7.1 Identification

- 7.1.1** The Contractor shall strip out the upper control cabin window structure and replace same with a CSM modified structure in accordance with Annex 7.A of this specification.

7.2 References

7.2.1 Drawings:

Drawing Title	Drawing Number	Location
Control Cab Modifications Strip-Out and	267-1000-1 and 267-1000-2	Annex 7.A

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Hull Structure Specification		Annex 7.B
Wheel House Alterations (Edstrom)	086-1005 to 086-1020	Annex 7.C
General Arrangement Structure	WAP1-88-H-4001	Annex 7.D
Control Cabin Structure	WAP1-88-H-4039	Annex 7.E
Control Cabin False Ceiling and	WAP1-88-18-4053	Annex 7.F
GA of Avionics	WAP1-88-82-4001	Annex 7.G
Solar Solve Ltd. Quotation		Annex 7.H
Front Window Visors		Annex 7.I

7.3 Technical

- 7.3.1** The ACV must be stored inside a sealed shelter protected from all-weather elements and free of all air drafts for the duration of all work in section 7 of this specification such that the weld quality of all repairs is not compromised by the elements.
- 7.3.2** The welding process used for all work in section 7 of this specification shall be Metal Inert Gas (MIG) suitable for 2 mm thick 5083 grade aluminum plate and 6082 aluminum extrusions.
- 7.3.3** All welds shall be performed using a CSM modern synergic welding machine (EWM Phoenix 421 or equivalent) and CSM 5183 grade filler metal.
- 7.3.4** The metal around the weld area shall be thoroughly cleaned with acetone on lint free cloths and abraded using zirconia alumina sanding discs and stainless steel wire brushes immediately before welding.
- 7.3.5** Unless otherwise stated, all aluminum plate and extrusions required to complete all work in section 7 of this specification shall be new GSM.
- 7.3.6** Unless otherwise stated, all equipment and consumables such as filler metal, inert gas and surface preparation materials required to complete all work in section 7 of this specification shall be CSM.
- 7.3.7** Prior to the start of work as described in Annex 7.A, the Contractor must verify the accuracy of the specification and drawing(s) against the as fitted structural arrangement.
- 7.3.8** The Contractor must fabricate and install the modified upper control cabin structure in accordance with Annex 7.A.
- 7.3.9** In accordance with Annex 7.A, the Contractor must strip out all obstructions affecting all work identified in Annex 7.A.

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- 7.3.10** Prior to commencing the strip-out process, the location and configuration of all equipment, systems, appliances, cable trays, lighting, fixtures and other obstructions identified for removal must be recorded in order to facilitate their reinstallation as per original.
- 7.3.11** Prior to commencing the strip-out process, all equipment, systems and appliances identified for removal must be LOTO.
- 7.3.12** All control cabin exterior mounted equipment, systems, appliances, fixtures and other obstructions identified for removal must be disconnected, removed and stored as detailed in section 6 of this specification.
- 7.3.13** In accordance with Annex 7.A and in consultation with the TA, all controls, instrumentation, navigation and communications equipment, alarm panels, appliances, wiring, lighting, cable trays and other obstacles fitted to the exterior and the interior of the control cabin and interfering with the work described in Annex 7.A must be disconnected as applicable and removed
- 7.3.14** All removed items must be carefully stored until reinstallation in accordance with manufacturer's specifications for long term storage such that they are protected from damage, corrosion and the ingress of contaminants and do not obstruct all other work included in this specification.
- 7.3.15** All existing defects revealed during the course of the strip-out must be recorded and immediately reported to the TA for corrective action.
- 7.3.16** All damage to items and the ACV caused by the strip-out process must be immediately reported to the TA and repaired at the Contractor's expense prior to the close of contract.
- 7.3.17** All non-removable equipment, systems, appliances, fixtures or parts thereof must be protected in order to avoid all damage from work described in Annex 7.A.
- 7.3.18** Where guidance is required for the removal of complex equipment and systems, the Contractor must consult with the TA, manufacturer's recommendations and Annex 2A as applicable.
- 7.3.19** In accordance with Annex 7.A, all control cabin ceiling and bulkhead paneling must be carefully removed and stored until reinstallation such that it is protected from damage, corrosion and the ingress of contaminants and does not obstruct all other work included in this specification.
- 7.3.20** In accordance with Annex 7.A, all control cabin ceiling and bulkhead insulation must be removed and disposed of in accordance with applicable environmental regulations.
- 7.3.21** All remaining items fitted to the control cabin ceiling and bulkheads and revealed after the removal of paneling and insulation and interfering with work described in Annex 7.A must be disconnected, removed and stored until reinstallation.
- 7.3.22** Following the removal of all obstructions as described above, the existing upper control cabin structure must be stripped out as detailed in Annex 7.A. All items identified for reinstallation must be carefully removed and stored such that they are protected from damage, corrosion and the ingress of contaminants and do not obstruct all other work included in this specification.
- 7.3.23** At the completion of the strip-out process, the modified upper control cabin structure

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- must be installed in accordance with Annex 7.A.
- 7.3.24** Prior to the recoating of all control cabin surfaces, all mounting brackets, cable trays and other securing arrangements required to reinstall and secure all items identified for reinstallation, must be installed using new CSM materials.
- 7.3.25** Prior to the recoating of all control cabin surfaces, all mounting brackets, wire trays, insulation anchors and other securing arrangements required to install and secure all new equipment, systems, appliances, insulation and fixtures, must be installed using new CSM materials.
- 7.3.26** The Contractor must obtain a substrate profile of all new aluminum inside the control cabin consistent with Annex 6a.B.
- 7.3.27** All blasting grit and debris must be contained and disposed of according to applicable Federal, Provincial, and Municipal regulations.
- 7.3.28** All new aluminum inside the control cabin must be coated in accordance with Annex 6a.B.
- 7.3.29** All coatings must be applied within the scheduled period such that the newly applied coating is thoroughly cured prior to the reinstallation of all removed items. Any substandard coating application that is inconsistent with Annex 6a.B, must be removed and reapplied in accordance with Annex 6a.B at the Contractor's expense.
- 7.3.30** At completion of the coating process, new CSM insulation equivalent to original and as approved by the TA must be installed in accordance with manufacturer's instructions and as per original to the control cabin ceilings and bulkheads.
- 7.3.31** Modification to the new cabin top may cause instrumentation panels to be further from their source. The Contractor is to renew these cables from the source rather than installing junction boxes.
- 7.3.32** Following the installation of all control cabin insulation, wiring and other items as applicable, all control cabin ceiling and wall paneling must be reinstalled as per original where possible.
- 7.3.33** Existing ceiling and wall paneling must be modified and new CSM ceiling and wall paneling must be installed as necessary to accommodate changes made to the control cabin structure as detailed in Annex 7.A. New CSM wall paneling must match the existing wall paneling and must be determined in consultation with the TA.
- 7.3.34** New CSM SOLASOLV SOLSAFE grey solar film sunscreens as described in Annex 7.H must be installed in accordance with manufacturer's specifications, to all port and starboard control cabin side windows. Items 1 and 2 of Annex 7.H must be deleted from the sunscreen order.
- 7.3.35** The original sun visors fitted to the port and starboard sides of the front window as outlined in blue in Annex 7.I must be reinstalled as per original.
- 7.3.36** Unless otherwise stated and in consultation with the TA, all controls, instrumentation, navigation and communications equipment, alarm panels, appliances, wiring and other items removed from the control cabin exterior and interior structural surfaces for the completion of all work in this specification must be reinstalled and reconnected as per original and in accordance with TP 5579 and TP 127E.

7.3.37 One new GSM sun screen must be installed to each of the 3 port and 3 starboard control cabin side windows (6 sunscreens total) in accordance with manufacturer's specifications.

7.3.38 One new GSM sun visor must be installed to each side of the control cabin front window (two visors total) in accordance with manufacturer's specifications.

7.4 Proof of Performance

7.4.1 Following the removal of all controls, instrumentation, navigation and communications equipment, alarm panels, appliances, lighting and other obstacles fitted to the exterior and the interior of the control cabin, the Contractor must afford the Project Officer the opportunity to inspect the condition of all wiring associated to the removed items.

7.4.2 Following the strip-out of all obstructions and prior to the structural strip-out, the Contractor must afford the TA the opportunity to inspect the control cabin and the storage of all removed items.

7.4.3 Following the structural strip-out and prior to the installation of the modified upper control cabin structure, the Contractor must afford the TA the opportunity to inspect the lower control cabin.

7.4.4 During and following the installation of the modified upper control cabin structure, the Contractor must afford the TA and the attending TCMS Surveyor the opportunity to witness the NDT of all welds as detailed in Annex 7.A.

7.4.5 Following the installation of the modified upper control cabin structure and prior to the installation of all other items, the Contractor must afford the TA and the attending TCMS Surveyor the opportunity to inspect the control cabin.

7.4.6 Following the installation of all equipment mounting brackets and other securing arrangements and prior to the installation of all insulation and paneling, the Contractor must afford the TA the opportunity to inspect the control cabin.

7.4.7 The Contractor must afford the TA the opportunity to inspect the control cabin following the installation of all control cabin ceiling and wall panelling and the installation of all controls, instrumentation, navigation and communications equipment, alarm panels, appliances, wiring, lighting and other items identified for reinstallation to the exterior and interior of the control cabin.

7.4.8 The Contractor must afford the TA the opportunity to witness a full functionality test of all reinstalled control cabin controls, instrumentation, navigation and communications equipment, alarm panels, appliances, wiring, lighting and other items identified for reinstallation to the exterior and interior of the control cabin. All deficiencies observed during the test must be corrected at the Contractor's expense and all equipment and systems proven fully functional prior to the close of contract.

7.5 Deliverables

7.5.1 Prior to the close of contract, the Contractor must provide to the TA a revised copy of the associated ACV reference drawings included in Annex 7.A clearly indicating all

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changes made to the subject drawings and resulting from all work carried out in section 7 of this specification. All new material must be identified on the revised schematic.

- 7.5.2** Prior to the close of contract, the Contractor must provide to the TA a revised copy of the associated ACV electrical schematic(s) clearly indicating all modifications made to the electrical distribution system and resulting from all work carried out in section 7 of this specification. All new material and equipment such as wiring and circuit breaker specifications must be identified on the revised schematic.

7a MAST WINCH INSTALLATION

7a.1 Identification

- 7a.1.1** The Contractor must design an electric mast lowering winch system built of all marine approved components. The Contractor must submit the design for TCMS approval. The Contractor must purchase all components and fit the new system. The Contractor must provide an as fitted drawing and test the new system.

7a.2 References

Titre/Title	No. du dessin/Drg. No.	Emplacement/Locatio n
Control Cabin Roof Spine & Winch Assembly	WAP1-88-H-4139	Annex 7a.A
Mast Installation	WAP1-88-H-4073	Annex 7a.B

7a.3 Technical

- 7a.3.1** The Contractor must complete all load calculations and design for an electric motor driven mast winch lowering and raising system.
- 7a.3.2** The Contractor must develop both design and contruction drawings and submit them to TCMS for approval. The new design must provide controlled raising and lowering of the mast.
- 7a.3.3** Annexes 7a.A and 7a.B shall be referred to as required for technical information associated to the existing mast and winch installations.
- 7a.3.4** The Contractor must remove the existing mast winch in accordance with section 7a. of this specification and must replace same with a new electric 24VDC marine certified mast winch in accordance with the CSM engineered plans.
- 7a.3.5** The exact permanent location for the winch controls shall be decided in consultation with the TA.
- 7a.3.6** The new electric 24VDC marine certified mast winch and all of the materials required for the complete installation must be CSM.

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7a.4 Proof of Performance

7a.4.1 The Contractor must afford the TA the opportunity to witness a full functionality test of the new electric mast winch installation. All deficiencies observed during the test must be corrected at the Contractor's expense and the system proven fully functional prior to the close of contract.

7a.5 Deliverables

7a.5.1 Prior to the close of contract, the Contractor must provide the TA a revised copy of the associated ACV reference drawings included in Annexes 7a.A and 7a.B clearly indicating all changes made to the subject drawings and resulting from all work carried out in section 7a of this specification. All new material must be identified on the revised schematic.

7a.5.2 Prior to the close of contract, the Contractor must provide to the TA a revised copy of the associated ACV electrical schematic(s) clearly indicating all modifications made to the electrical distribution system and resulting from all work carried out in section 7a of this specification. All new material and equipment such as wiring and circuit breaker specifications must be identified on the revised schematic.

7a.5.3 Prior to the close of contract, the Contractor must provide to the TA all manuals and documentation associated to all newly installed equipment.

7b WINDOW WIPERS REPLACEMENT

7b.1 Identification

7b.1.1 The Contractor must install 6 new window wiper and washer assemblies to the modified control cabin structure as outlined in blue on Annex 7b.

7b.2 References

Titre/Title	# de Dessin/Drg. #	Emplacement/Locatio n
Windshield Wipers, Washers and Heaters	3-12-1 Sheets 1 & 2	Annex 7b.A
Installation & Operation Manual Type D MKV Straight Line Wiper With Series 1000 Control System Issue 11		Annex 7b.B
Installation & Maintenance Instructions for the 50NM Compact Single Station Windscreen Wiper System		Annex 7b.C

7b.3 Technical

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- 7b.3.1** Unless otherwise stated, all equipment and materials required to complete all work in section 7.3b of this specification must be new CSM. All non-GSM plumbing and electrical materials and system components required to complete all wipers and wash system installation must be new CSM.
- 7b.3.2** The Contractor must install the new GSM Wynn Type D Mk V twin blade straight line window wiper assembly to the forward pilot house window in accordance with manufacturer's instructions as detailed in Annex 7b.B of this specification.
- 7b.3.3** The Contractor must install the new GSM Wynn Series 1000 controller (IPN: 1000-024-110-1) in accordance with manufacturer's instructions as detailed in Annex 7.3B of this specification. The Contractor must consult with the PO to determine the controller's precise permanent location.
- 7b.3.4** **The Contractor must install the 5 new GSM Hepworth Type 50 Series pantograph wiper assemblies to the control cabin side and aft windows in accordance with the manufacturer's instructions as detailed in Annex 7b.C of this specification. One wiper per window will be installed to each of the windows outlined in blue on Annex 7b.A and as follows:**
- 7b.3.4.1** port side forward
 - 7b.3.4.2** port side center
 - 7b.3.4.3** stbd side forward
 - 7b.3.4.4** stbd side center
 - 7b.3.4.5** port aft
- 7b.3.5** The Contractor must install the 5 new GSM Hepworth series 1000 wiper controllers in accordance with the manufacturer's instructions as detailed in Annex 7b.C of this specification. The Contractor must consult with the PO to determine the controllers' precise permanent locations.
- 7b.3.6** The Contractor must install the new GSM wash system servicing all 6 new window wipers in accordance with manufacturer's instructions. The contractor is to confirm the location of the equipment with the PO prior to installation.
- 7b.3.7** The Contractor must install the wash system accumulator tank, the pressure check valve, the inline Tee and the six solenoid valves. The contractor must confirm permanent control cabin locations with the PO prior to installation.
- 7b.3.8** The Contractor must install the washer fluid holding tank and the washer fluid pressure pump. The Contractor must confirm the location with the PO prior to the installation.
- 7b.3.9** The contractor is to run a power cable from the ACV's 24 VDC distribution system capable of supplying all six window wipers, controllers and the window washer pump. If a new breaker is required it will be covered by PWGSC 1379.
- 7b.3.10** The contractor must modify the existing consoles and control cabin layout in order to accommodate all wiper and washer system components. The contractor is to propose the lay-out for approval by the PO.

7b.3.11 The Contractor must supply and install all materials required to mount and secure all system components to the ACV structure in accordance with TP 5579 (<http://data.tc.gc.ca/archive/eng/marinesafety/tp-tp5579-menu-1350.htm>). Surface preparation and welding procedures as required must be in accordance with procedures outlined in section 7b of this specification.

7b.3.12 The Contractor must supply and install all materials and equipment necessary to complete the power supply circuit to all six window wipers, controllers and window washer system in accordance with manufacturer's specifications and the latest revisions of Transport Canada Marine Safety Electrical Standard TP127E (<http://www.tc.gc.ca/eng/marinesafety/tp-tp127-menu-263.htm>) and IEEE Standard 45 Recommended Practice for Electrical Installations on Ships.

7b.4 Proof of Performance

7b.4.1 The Contractor must afford the PO the opportunity to inspect the six complete window wiper and controller installations prior to sealing up.

7b.4.2 The Contractor must afford the PO the opportunity to inspect the complete window washer installation prior to sealing up.

7b.4.3 The Contractor must afford the PO the opportunity to witness a full functionality test of all six window wipers and the window washer installations. All deficiencies observed during the test must be corrected at the Contractor's expense and the system proven fully functional prior to the close of contract.

7b.5 Deliverables

7b.5.1 Prior to the close of contract, the Contractor must provide to the TA a revised copy of the associated ACV electrical schematic(s) clearly indicating all modifications made to the electrical distribution system and resulting from all work carried out in section 7b of this specification. All new material and equipment such as wiring and circuit breaker specifications must be identified on the revised schematic.

8 MAIN CABIN INSULATION REPLACEMENT

8.1 Identification

8.1.1 The Contractor must replace all of the main cabin ceiling and wall insulation with new

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CSM marine grade insulation.

8.2 References

Titre/Title	No. du dessin/Drg. No.	Emplacement/Locatio n
Control and Main Cabin Layout	CC162	Annex 8.A
G.A. Internal Accommodation	WAP1-88-18-4001	Annex 8.B
Galley Unit	WAP1-88-18-4009	Annex 8.C
Toilet Unit	WAP1-88-18-4010	Annex 8.D
Radio Bay	WAP1-88-18-4011	Annex 8.E
Cabin Roof	WAP1-88-H-4030	Annex 8.F
Dinette Seating Arrangement	WAP1-88-18-4012	Annex 8.G
Fire Insulation Main Cabin	HTWAP1-88-83-4668	Annex 8.H

8.3 Technical

- 8.3.1** All obstructions interfering with the removal of all paneling fitted to the ceiling and walls of the main cabin must be disconnected and removed to permit the removal of all ceiling and wall paneling.
- 8.3.2** All paneling fitted to the ceiling and walls of the main cabin must be removed as required for the replacement of all ceiling and wall insulation.
- 8.3.3** Prior to commencing the removal process, the location and configuration of all furnishings, equipment, systems, appliances, cable trays, lighting, fixtures and other obstructions identified for removal must be recorded in order to facilitate their reinstallation as per original.
- 8.3.4** Prior to commencing the removal process, all equipment, systems and appliances identified for removal must be LOTO.
- 8.3.5** In consultation with the PO and in reference to Annexes 8.A thru 8.F, all furnishings, equipment, systems, appliances, cable trays, lighting, fixtures and other obstructions interfering with the replacement of the ceiling and wall insulation must be disconnected as applicable and removed as required.
- 8.3.6** All removed items must be carefully stored until reinstallation in accordance with manufacturer's specifications for long term storage such that they are protected from damage, corrosion and the ingress of contaminants and do not obstruct all other work included in this specification.
- 8.3.7** All existing defects to removed items and the ACV and revealed during the course of removals must be recorded and immediately reported to the TA for corrective action.
- 8.3.8** All damage to removed items and the ACV caused by the removal process must be immediately reported to the TA and repaired at the Contractor's expense prior to the

close of contract.

- 8.3.9** All non-removable equipment, systems, appliances, fixtures or parts thereof must be protected in order to avoid all damage from work included in this specification.
- 8.3.10** Where guidance is required for the removal of complex equipment and systems, the Contractor must consult with the PO, manufacturer's recommendations and Annex 2A as applicable.
- 8.3.11** All main cabin ceiling and bulkhead paneling must be carefully removed and stored until reinstallation such that it is protected from damage, corrosion and the ingress of contaminants and does not obstruct all other work included in this specification.
- 8.3.12** The Contractor is to subcontract to a proven experience and established insulation company. The FSR of the insulation company is to identify the existing R- value and replace it with new insulation of higher R-Value.
- 8.3.13** All main cabin ceiling and bulkhead insulation must be removed and disposed of in accordance with applicable environmental regulations.
- 8.3.14** In consultation with the TA, a new CSM marine grade insulation as per original or of superior quality must be selected and installed as per original to the control cabin ceiling and bulkheads.
- 8.3.15** The Contractor must supply and install as applicable all materials required to secure the new insulation to the main cabin ceiling and walls.
- 8.3.16** Where fire rated insulation is required as specified in Annex 8.H, new CSM FireMaster Marine Plus Blanket insulation or equivalent as approved by the TA must be installed in accordance with manufacturer's instructions, Annex 8.H and as per original to the main cabin ceiling.
- 8.3.17** Following the installation of all control cabin insulation, wiring and other items as applicable, all main cabin ceiling and wall paneling must be reinstalled as per original.
- 8.3.18** Unless otherwise stated and in consultation with the TA, all furnishings, equipment, systems, appliances, cable trays, lighting, fixtures and other main cabin items removed or disturbed for the completion of all work in this specification must be reinstalled and reconnected as per original and in accordance with TP 5579 and TP 127E.

8.4 Proof of Performance

- 8.4.1** Following the removal of all furnishings, equipment, systems, appliances, cable trays, lighting, fixtures, paneling, insulation and other obstructions identified for removal, the Contractor must afford the TA the opportunity to inspect the main cabin and the condition of all removed items.
- 8.4.2** Following the installation of all new insulation and prior to the reinstallation of all paneling, the Contractor must afford the TA the opportunity to inspect the main cabin.

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8.4.3 Following the installation of all control cabin insulation and prior to the installation of all ceiling and wall panelling, the Contractor must afford the TA the opportunity to inspect the control cabin.

8.4.4 The Contractor must afford the TA the opportunity to inspect the control cabin following the installation of all control cabin ceiling and wall panelling and the installation of all controls, instrumentation, navigation and communications equipment, alarm panels, appliances, wiring, lighting and other items identified for reinstallation to the exterior and interior of the control cabin.

8.4.5 The Contractor must afford the TA the opportunity to witness a full functionality test of all reinstalled control cabin controls, instrumentation, navigation and communications equipment, alarm panels, appliances, wiring, lighting and other items identified for reinstallation to the exterior and interior of the control cabin. All deficiencies observed during the test must be corrected at the Contractor's expense and all equipment and systems proven fully functional prior to the close of contract.

8.5 Deliverables

8.5.1 Prior to the close of contract, the Contractor must provide to the TA a copy of the manufacturer's insulation specifications for the type of insulation used inside the main cabin.

9 3412 ENGINE CONTROL SYSTEM MODIFICATION

9.1 Identification

9.1.1 The intention of this specification is to upgrade the existing propulsion control system components to the latest version of the same equipment. The propulsion monitoring equipment is to be replaced with a new set of Marine Power Display (MPD) units and new wiring harnesses.

9.2 References

Data d'Équipement/Equipment Data Item	Information/Information
Existing Controls-Mather's Control	Annex 9.A
Required Controls-Information on New Mather's Control	Annex 9.B

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9.3 Technical

- 9.3.1 SUPPLY OF EQUIPMENT:** The Contractor must supply as CFM, the new model of the Mathers control from Caterpillar Canada to operate the Caterpillar engines and propeller pitch. The Contractor in conjunction with Griffon Hoverworks and Carris Brooke Engineering in the UK must configure the new mathers controls arrangement.
- 9.3.2** The Contractor must supply and install four (4) new Cat MPD units and 70 foot Cat supplied wire harnesses. The existing wire harnesses are to be removed and the new harnesses are to be installed.
- 9.3.3** The Contractor must ensure that OEM programming and ECM flashing be completed.
- 9.3.4** The following components are required for hooking up the MPDs:
- 9.3.4.1** Part # : 1743016
- 9.3.4.2** Part Name: T-resistor
- 9.3.4.3** Quantity: 4
- 9.3.5** The Caterpillar representative must commission the new equipment
- 9.3.6 The new equipment must incorporate the following:**
- 9.3.6.1** The existing system incorporates a "Push to Talk" button on the control head to enable the pilot to speak into his headset.
- 9.3.6.2** The system also incorporates a sync switch which allows the synchronization of the lift or prop engines to one control head
- 9.3.7 REMOVALS:** The Contractor must remove the existing Mather's controls, including control cabling which is to be retained by the TA.
- 9.3.8 INSTALLATION OF EQUIPMENT:** The Contractor must replace the cabling from the control heads to the four (4) engines.
- 9.3.9** The Contractor must match the operating configuration of the old system with the new system.
- 9.3.10** The Contractor must install the new control heads in the same position as the old set.
- 9.3.11** The Contractor is to replace the existing analog tachometer with a compatible digital tachometer which will then interface with the newly installed CAT MPD displays.
- 9.3.12** The Contractor must install four (4) new interface boxes. . The dimension of the new box are 10 ½" x 7" x 4 ½" deep approximately.

9.4 Proof of Performance

- 9.4.1** The new control heads are installed.
- 9.4.2** The new heads have a 'push to talk' button function for the headset radios.
- 9.4.3** The new system allows for the control head functions to be synchronized with one another.
- 9.4.4** The new interface box is securely mounted and causes no interference with existing components.
- 9.4.5** The upgraded controls operate as power manufacturer's specifications and as per the original units.

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9.5 Deliverables

- 9.5.1** TESTING AND TRIAL: The Contractor must have the Caterpillar Representative commission the installation.
- 9.5.2** The Contractor must prove the operation of the functions of the control heads. The controls must be verified by CG ACV engineers.
- 9.5.3** CERTIFICATION: The Contractor must produce an as fitted drawing and submit it to TCMs for approval.
- 9.5.4** Certification must be provided to the TA in accordance with the Documentation section of the General Notes.
- 9.5.5** Training: Training must be provided by the Caterpillar representative to CCG crew.
- 9.5.6** The training is to be completed after the completion of commissioning at the contractors facility.
- 9.5.7** The contactor is to bid 1-eight hour (8) day for six people on newly installed Caterpillar Control system. This is to include the facility and all required documentation.

10 Fuel System valve replacement and overhauling of fuel pumps

10.1 Identification

- 10.1.1** The four (4) fuel oil pumps, drive motors, and their respective suction boxes are to be removed from the craft and completely disassembled for inspection
- 10.1.2** All seals and worn components are to be replaced and the units are to be re-installed.
- 10.1.3** The five (5) remote fuel valves must be removed from the craft and replaced with new CFM valves.
- 10.1.4** Two new CFM valves are to be provided as spares.

10.2 References

Data d'équipement/Equipment Data		Information/Information	
Fuel Pump		25/506-F/2 Albany Pumps	
¾" motorized valve Actuator listed a MAR 8/9.6		ALCO Valve company, Working voltage : 24 V DC Voltage Range : 20-28 V DC Current: 2.2 Amp nominal Operating time 2.8 seconds	
Titre/Title		No. du dessin/Drg. No.	Emplacement/Location
Fuel and ballast system diagram		CC013	Annex 2C
Fuel and ballast system layout		CC021	Annex 2C
Engine Fuel system		CC146	Annex 2C
Fuel system in buoyancy tank		WAP1-88-57-4007	Annex 10.A
Ballast pump assembly		WAP1-88-57-4017	Annex 10.A
ALCO product sheet			Annex 10.B

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10.3 Technical

- 10.3.1** The Contractor must be responsible for the disassembly and removal of all obstructions to the work described in this specification and must reinstall same as per original at Contractors' expense prior to the close of contract.
- 10.3.2** The Contractor must lock out the power supply breakers to the pumps and valves at the main breaker panel.
- 10.3.3** The Contractor must pull back the wiring from the pumps and valves, label and protect them from other work occurring in their respective areas.
- 10.3.4** The Contractor must disassemble and clean all the components of the four (4) fuel oil transfer pumps. There are two pumps fitted aft of frame 15 and two pumps fitted forward of frame 5.2. All defects and parts required must be reported to the TA and corrected using PWGSC 1379 action.
- 10.3.5** The Contractor must renew all O-rings and seals for the four (4) fuel oil transfer pumps with fuel oil compatible CFM seals.
- 10.3.6** The Contractor must remove four (4) electric motors.
- 10.3.7 The Contractor must have the four (4) electric motors serviced by an experienced electrical contractor.**
- 10.3.8** The Contractor is to ensure that the four (4) electric motors are fully disassembled, cleaned and made ready for inspection.
- 10.3.9** All defects and parts required must be reported to the TA. All repairs and parts are to be corrected by PWGSC 1379 action.
- 10.3.10** The Contractor is to coordinate the Transport Canada (TC) inspection of both the disassembled fuel pumps and electric motors. The TA must receive 48 hours warning of the TC visit.
- 10.3.11** The Contractor is to ensure that the four (4) electric motors are re-assembled with new bearings. The bearings are to be covered by PWGSC 1379 action.
- 10.3.12** The Contractor must provide an inspection report for the four (4) motors including insulation readings.
- 10.3.13** The Contractor must re-install the pumps and electric motors upon completion of the servicing.
- 10.3.14** The Contractor must ensure the alignment between the motors and the pumps. A report of the readings is to be given to the TA.
- 10.3.15** The Contractor must disconnect electrically the 5 remote actuated fuel valves.
- 10.3.16** These valves are indicated on the Fuel and Ballast Diagram (CC013). Valves K, J, L are located aft of frame 15, valves B, C are located aft of frame 5.2.
- 10.3.17** The Contractor must purchase and install five (5) new valves and provide two complete valves to the TA for use as spares. The valves must be as per the information provided.
- 10.3.18** The Contractor is to return the existing valves to the TA.
- 10.3.19** The Contractor must reconnect the wiring for the pumps and valves.
- 10.3.20** The Contractor must ensure all pipe connections to the pumps and valves are leak free.

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10.3.21 The Contractor must test fuel management system which the low level indicator, high level indicator and high level shut downs. The testing procedure must be carried out prior to reinstallation of the propulsion engine radiators.

10.3.22 The Contractor must conduct an electrical continuity test on all fuel system wiring as per TP 5579 art. 3218.

10.4 Proof of Performance

10.4.1 During dock trials, the Contractor is to fill the craft to 50% fuel capacity. The fuel is to be purchase through PWGSC 1379 and the fueling operation completed by the Coast Guard ACV engineer.

10.4.2 The operation of the remote fuel valves is to be proven from the control panel and to the satisfaction of the PO.

10.4.3 All pipe connections in the fuel system are to be inspected and all leaks corrected.

10.4.4 The system is to be energized and each of the four (4) pumps used to transfer fuel between the service tanks of the craft. The ACV Engineers are to verify the pumps are working to the capacity and as per the system design.

10.5 Deliverables

10.5.1 The Contractor must provide inspection reports for the pumps and motors.

10.5.2 The Contractor must provide all documentation and certification for the new remote actuated valves.

10.5.3 The Contractor must provide the invoice for the fuel received verifying type, quality and quantity.

11 ELECTRONIC AND NAVIGATION EQUIPMENT WIRING

11.1 Identification

11.1.1 The Contractor must arrange to have all external and a number of internal (from within the craft cabin) electronic devices removed from the craft after the transit to the contractors facility.

11.1.2 The contractor must remove all external and a number of internal (from within the craft cabin) electronic devices under the guidance of CCG. The Contractor must clearly identify and label all cable that has been disconnected from the removed equipment.

11.1.3 All removed devices will be relocated by the contractor to and stored at CCGB Quebec City and returned, installed and tested prior to the completion of the contract in accordance with the contractor's schedule.

11.1.4 The Contractor must supply and install the electronic components identified in table

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11.2.1 along with appropriate mountings, fittings and connectors.

11.1.5 A section of plate at the aft cabin bulkhead containing all bulkhead glands for mast wiring must be cropped out and replaced with new by the Contractor. A new watertight packed gland must be inserted into the new section of plate with the capacity to accommodate all mast wiring and provide for, at minimum, 50% additional capacity.

11.2 References

11.2.1 Equipment to be purchased

Item	Information
Navtex Receiver	Sailor 6391 Navtex Receiver Sailor 6004 Terminal
PCTEL UHF Antenna ¼ wave UHF	PCTEL – P/N PCTCN4347
Temperature sensor	
AOR VHF-DF antenna cable	AOR-AA381M Antenna Cable

11.2.2 Equipment Data

11.2.2.1 Equipment Data is provided in each specific section below.

11.2.3 Drawings

- 11.2.3.1** The electronic reference drawings provided with this specification are for the purpose of providing basic information to the contractor. The Contractor should note that the drawings are not necessarily up to date and should not be considered absolutely exact.
- 11.2.3.2** Using the reference drawings, specifications and installation instructions provided by the manufacturer, the contractor must prepare a set of working drawings, defining installation requirements, to wit; physical locations, power supply and interconnection of equipment.
- 11.2.3.3** Electronic copies of working drawings must be submitted to both the PWGSC and the technical authority for review and comments. The contractor must incorporate these comments into the final working drawings.

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- 11.2.3.4** As-fitted drawings must be provided, indicating the exact physical layout and electrical connections of electronic systems updated upon acceptance of the vessel.
- 11.2.3.5** As-fitted drawings must be divided by construct or compartment and must clearly indicate the physical location of the principal components of the system. Interconnection diagrams, showing detailed electrical connections among the system's equipment, must also be included.
- 11.2.3.6** The contractor must provide two sets of as-fitted drawings in electronic format, the first in Adobe PDF format and the second in the latest AutoCAD format.
- 11.2.3.7** All drawings below should be considered "Reference drawings". Refer to Annex 11.A

Item	Information
LM820-010-AL	Sipumuin - Antenna arrangement
LM820-020-GA	Sipumuin - General layout
LM820-200-BD	Sipumuin - Navigation equipment
LM820-220-BD	Sipumuin - X Band radar
LM820-231-WI	Sipumuin - Gyroscopic compass
LM820-340-BD	Sipumuin - Aldebaran electronic chart
LM820-372-IN	Sipumuin - AIS

11.3 Technical

- 11.3.1** General: All fixture and wiring located on the mast must be identified and appropriately marked.
- 11.3.2** The fixtures must be functionally/witness tested, removed and securely stowed away
- 11.3.3** The wiring must be pulled down the mast removed from the transit, pulled down inside and secured out of the way. The Contractor must wrap and protect the Equipment and antennas that can be left on the mast.
- 11.3.4** The contractor must take out the interior lining and insulation from the cabin to allow wiring to be removed. Special care must be taken so that items removed from the cabin can be reinstalled in the same condition as when they were removed.
- 11.3.5** All electronic wiring to external peripherals must be pulled to the aft of the cabin or removed and replaced as detailed below.

To be removed	Cabin	
Gyrotrac	Port wall behind navigator	Remove
Saab R4 receiver	Port wall behind navigator	Remove and keep for re-installation
Reuter converter 4 modules	Port wall behind navigator	Remove and keep for re-installation
Cubic vhf df 4400	Port wall besides navigator chair	Remove and keep for re-installation

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Garmin GMI10 wind direction indicator	Port above navigator window	Remove and keep for re-installation
Autohelm - depth indicator	Port above navigator window	Remove and keep for re-installation
VDO outside temperature display	Port above navigator window	Remove and keep for re-installation
Astro Tech - Clock	Port above navigator window	Remove and keep for re-installation
SR-01 Gyro repeater	Port above navigator window	Remove and keep for re-installation
RH444 magnetic indicator	Forward above navigator window	Remove and keep for re-installation in same place
BridgeMaster E Radar	In front of navigator	Remove
Electronic chart screen (small pc)	In front of navigator	Remove and keep for re-installation
Keyboard - track ball and keyboard bracket	In front of navigator	Remove and keep for re-installation
AlphaTronix converter	Console front of navigator behind small pc screen	Remove and keep for re-installation
Icom 6022 - UHF Radio	Centre above console	Remove and keep for re-installation
SAAB AIS/GPS R4 display	Centre top of console	Remove and keep for re-installation
Icom IC-M604	Console middle centre	Remove and keep for re-installation
RH444 magnetic indicator	In front of pilot	Remove and keep for re-installation in same place
Magnavox MX10 gyro display	In front of pilot	Remove and keep for re-installation in same place
Radio control panel (9 modules)	Centre console	Remove

To be removed	Cabin Roof		
Unit	Position	Antenna	Cable
1 - Bridgemaster turning unit radar	Forward centre	Remove and replace with new one	Remove and replace with new cable
2- Vtronix AA-20 (navtex)	Aft centre	Remove and replace with new one	Remove and replace with new cable
Gyrotrac 3-sensor Gyro compass	Port middle	Remove	remove
10 - MGL-4 GPS antenna	Middle port	Remove for re-installation in same place	Remove and replace with new cable
11 - Furuno GPS antenna	Port middle	Remove for re-installation in same place	Remove and replace with new cable
12 - Sinclair VHF AM antenna	Starboard centre	Remove for re-installation in same place	Remove and replace with new cable
13 - Jotron EPIRB	Centre	Remove for re-installation in same place	
14 - Shakespeare 5215 VHF DSC	Aft centre	Remove for re-installation in same place	Remove and replace with new cable
16 - MGL-4 GPS antenna (VDR)	Port middle	Remove for re-installation in same place	Remove and replace with new cable
17 - Digital Antenna cell antenna	Centre	Remove for re-installation in same place	Keep

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18 - Digital Antenna cell antenna	Centre	Remove for re-installation in same place	Keep
19 - Reven cell modem housing	Centre	Remove for re-installation in same place	Keep
20 - PCTEL UHF antenna	Port forward on railing	Remove and replace with new one	Remove company cable
Temperature sensor	Forward port corner	Remove and replace with new one	Remove and replace with new cable

To be removed	Mast		
Unit	Position	Antenna	Cable
4- (Cable) Airmar - CCG anemometer	Starboard upper (closest to mast)	Leave in place	Remove and roll cable for re-installation
15 -(Cable) VDR anemometer (Cable)	Starboard upper (furthest from mast)	Leave in place	Remove and roll cable for re-installation
5 - (Cable) AOR VHF-DF antenna (Cable)	Top of mast	Leave in place	Replace antenna cable and control
6 - (Cable) Digital Antenna cell 996 (Cable)	Port upper	Leave in place	Replace cable
7 - (Cable) Sinclair SRL-225 VHF 2 (Cable)	Port centre	Leave in place	Replace cable
8 - (Cable) Sinclair SRL-225 VHF 1 (Cable)	Starboard centre	Leave in place	Replace cable
9 - (Cable) Comrod AV-6-K/U (Cable)	Forward centre	Leave in place	Replace cable

To be removed	Lower level office		
McMurdo Navtex 5 receiver	Panel on starboard		Keep power cable

To install	Inside
Sailor 6391 Navtex Receiver	Under communications room panel to right of VDR
UPS 1500	Above communications room panel beside PROsine inverter
VisionMaster PCIO	Port wall between navigator's and observer's chairs
SAAB nav sensor receiver	Port wall to the left of PCIO
Reuter DVR (4 modules)	Port beside navigator's chair in place of CUBIC 4400
Sailor 6004 Terminal	Port deckhead wall angle behind navigator chair
SAAB R4 display	Port deckhead wall angle behind navigator chair
ICOM 6022 UHF	Port deckhead wall angle behind navigator chair
Alphatronix 24/12v converter	Inside wall beside ICOM 6022
VDO ext. temperature indicator	Port wall and deckhead angle

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Autohelm depth indicator		Port wall and deckhead angle	
Garmin anemometer indicator		Port wall and deckhead angle	
Astro Tech clock		Port wall and deckhead angle	
SIMRAD IS20 Gyro repeater		Port wall and deckhead angle	
SIMRAD IS20 Gyro repeater		Forward of pilot (replace MX10)	
VisionMaster ft Chart version Kit		Forward left of navigator	
ECS screen trackball and keyboard		Forward right of navigator	
CUBIC 4400 VHF-DF		Centre console above IC-M604	
RH444 magnetic indicator		Forward above navigator window	
Vector VS-131		Behind navigator's ECS screen	
To install	Roof	Antenna	Cable
1- X-band radar antenna	Forward centre	New	New wiring
2- Vtronix AA-20 (navtex)	Aft centre	New	OEM cable with antenna
10 - MGL-4 GPS antenna	Port middle	Re-install antenna put aside	New RG214 coaxial cable
11 - Furuno GPS antenna	Port middle	Re-install antenna put aside	New RG214 coaxial cable
12 - Sinclair VHF AM antenna	Starboard centre	Re-install antenna put aside	New RG214 coaxial cable
13 - Jotron EPIRB	Centre	Re-install beacon put aside	
14 - Shakespeare 5215 VHF DSC	Aft centre	Re-install antenna put aside	New RG214 coaxial cable
16 - MGL-4 GPS antenna (VDR)	Port middle	Re-install antenna put aside	New RG214 coaxial cable
17 - Digital Antenna cell antenna	Centre	Re-install antenna put aside	Keep
18 - Digital Antenna cell antenna	Centre	Re-install antenna put aside	Keep
19 - Reven cell modem housing	Centre	Re-install antenna put aside	Keep
20 - PCTEL UHF antenna	Port forward on railing	New	OEM cable with antenna
Temperature sensor	Forward port corner	New	

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Primary antenna satellite compass	Port on railing of aft part of roof	New	New RG214 coaxial cable
Secondary antenna satellite compass	Port on railing of aft part of roof	New	New RG214 coaxial cable

To install	Mast	Antenna	Cable
4- Airmar - CCG anemometer cable	Starboard upper (closest to mast)	Re-install cable	Remove and roll cable for re-installation
15 - VDR anemometer cable	Starboard upper (furthest from mast)	Re-install cable	Remove and roll cable for re-installation
5 - AOR VHF-DF antenna cable	Top of mast	New	Replace antenna cable and control
6 - Digital Antenna cell 996 cable	Port upper	Leave in place	New RG214 cable
7 - Sinclair SRL-225 VHF 2 cable	Port centre	Leave in place	New RG214 cable
8 - Sinclair SRL-225 VHF 1 cable	Starboard centre	Leave in place	New RG214 cable
9 - Comrod AV-6-K/U cable	Forward centre	Leave in place	New RG214 cable

- 11.3.6** Cable Transit to Mast Aft: The Contractor must crop out the section of plate containing WT Cable Glands located forward of the foot of the mast in the aft Bulkhead of the Control Cabin.
- 11.3.7** The Contractor must weld in an insert plate, in place of the material cropped out. The insert plate must be fitted with a ROXTEC brand gland suitable for the present conductors (about 11) to transit the Bulkhead. The packed gland must provide for an additional 50% capacity and be watertight.
- 11.3.8** The packed gland must be situated so that stress is not induced in the conductors during the raising and lowering of the mast. Sufficient cable lengths must be left so that the mast can be lowered.
- 11.3.9** The Contractor is perform a spray test of the new transit and of any disturbed transits prior to re-installing the cabin's lining an insulation material.
- 11.3.10** Transits to Cabin Top/Sides: All cable glands must be replaced with new CFM glands.
- 11.3.11** All new cabling is to be marine certified and be category FT4 or higher. Ferrules must be installed on all bare wire in terminal blocks.

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- 11.3.12** Reinstallation: The Contractor must re-run the cables and reinstall the equipment that has been removed according to the Annex 11.A1. The Contractor must cut the mounting plates to accommodate the equipment.
- 11.3.13** The Contractor must ensure that the wiring is modified at adapt to the new equipment locations.
- 11.3.14** The Contractor must allow, where possible, for all wires and cables to have additional length so as to facilitate the removal of equipment for maintenance.
- 11.3.15** The Contractor must meggar test all the cables listed and provide the report to the TA.
- 11.3.16** The Contractor is to advise CG when the return of the electronic components is required.
- 11.3.17** The Contractor must re-connect all components.

11.4 Proof of Performance

- 11.4.1** Inspection Points: All Old wiring/cabling was removed and disposed of as directed
- 11.4.2** All new cabling is marine grade and of the type specified.
- 11.4.3** All new cabling was installed as directed.
- 11.4.4** The new bulkhead gland was installed correctly and all wires were sealed.
- 11.4.5** Cables are secured into existing wire ways.
- 11.4.6** The Contractor is to ensure that all electronic equipment is wired correctly.
- 11.4.7** The Electronic equipment is to be tested by CCG Technicians.
- 11.4.8** Testing/Trials: All transits must be hose tested to prove watertight integrity prior to remove interference materials being reinstalled. The TA must be afforded the opportunity to witness these tests.

11.5 Deliverables

- 11.5.1** The Contractor is to provide the results of the test and trials to the TA.
- 11.5.2** The Contractor has provided a report of the spray test for the new transit and any disturb transit.

11a INSTALLATION OF RADAR SYSTEM

11a.1 Identification

- 11a.1.1** The contractor must purchase and install a Vision Master Chart radar and a satellite compass system, as described below.

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11a.2 References

11a.2.1 Table

Item	Information
Vision Master Chart Radar VMFT 250 Kit format, 19" Flat Panel Display	p/n, Quantity: 1 Including: <ul style="list-style-type: none"> 33m X-Band Radar Installation Kit, p/n 119/MIK/33
Turning unit Masthead 10 Kw transceiver with 4' antenna and DC supply.	<ul style="list-style-type: none"> p/n, Quantity: 1
Hemisphere Vector Satellite Compass VS131	p/n VS131, Quantity: 1 Including: <ul style="list-style-type: none"> Hemisphere GNSS VS131 DGPS + Heading receiver GPS-GLO, SBAS, 10Hz (H-940-3096-000) Hemisphere GPS A31 Antenna Kit (GPS, Beacon, OmniSTAR) (H-940-2088-000) Hemisphere GPS Crescent Beacon Activation (H-163- 1026-000) Hemisphere GPS A21 Antenna (GPS,OmniSTAR) (H-940-2068-000)
Hatteland 17' inch flat panel display series X	HD 17T21 MMD MAE FAHP, Quantity: 1
Hatteland, Display mounting Bracket	p/n HD TMB SX1-B1, Quantity: 1
Simrad IS20	IS20 Compass marine instrument Part # 22095939 Quantity: 1
APC UPS 1500va	Mfg. part No. : SUA1500X93 CDW part No.: 650018 UNSPSC: 39121011 Quantity: 1

11a.3 Drawings

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- 11a.3.1** The electronic reference drawings provided with this specification are for the purpose of providing basic information to the contractor. The contractor should note that the drawings are not necessarily up to date, and should not be considered absolutely exact.
- 11a.3.2** Using the reference drawings, specifications and installation instructions provided by the manufacturer, the contractor must prepare a set of working drawings, defining installation requirements, to wit; physical locations, power supply and interconnection of equipment.
- 11a.3.3** Electronic copies of working drawings must be submitted to both the PWGSC and the technical authority for review and comments. The contractor must incorporate these comments into the final working drawings.
- 11a.3.4** As-fitted drawings must be provided, indicating the exact physical layout and electrical connections of electronic systems updated upon acceptance of the vessel.
- 11a.3.5** As-fitted drawings must be divided by construct or compartment and must clearly indicate the physical location of the principal components of the system. Interconnection diagrams, showing detailed electrical connections among the system's equipment, must also be included.
- 11a.3.6** The contractor must provide two sets of as-fitted drawings in electronic format, the first in Adobe PDF format and the second in the latest AutoCAD format.
- 11a.3.7** All drawings below should be considered "Reference drawings". Refer to Annex 11.B.

Item	Information
LM820-010-AL	Sipumuin - Antenna arrangement
LM820-020-GA	Sipumuin - General layout
LM820-200-BD	Sipumuin - Navigation equipment
LM820-220-BD	Sipumuin - X Band radar
LM820-231-WI	Sipumuin - Gyroscopic compass
LM820-340-BD	Sipumuin - Aldebaran electronic chart
LM820-372-IN	Sipumuin - AIS

11a.4 Technical

- 11a.4.1** The contractor must purchase and install one (1) ~~Sperry~~ Sperry Vision Master Chart Radar VMFT 250 Kit format, 19" Flat Panel Display; 1 Turning unit 4' Masthead 10Kw; 1 Hatteland 17" Display and a mounting bracket as described in the table of equipment.

11a.4.2 Contact:

Alan Aitken
Sperry Marine
Landmark Place
51 Raddall Ave, Unit 3

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Dartmouth, N.S. B3B 1T6
Ph: ~~902~~: 902-468-9479
Fax: ~~902~~: 902-468-9480
Cell: ~~902~~: 902-802-9796
E-mail: alan.aitken@sperry.ngc.com

Field Code Changed

11a.4.3 The contractor must purchase one (1) Hemisphere Vector Satellite Compass VS131, as described in the table of equipment.

11a.4.4 Contact:

Philippe Doucet
Canal Geomatic Inc / TerrisGPS Ltd.
169, Champlain street, unité 1
Gatineau, Qc
J8X 2R3
Tel.: 819-595-5015 (ext 201)
Fax: 819-595-0089
phil@canalgeomatics.com

11a.4.5 All equipment must be TC approved.

11a.4.6 Disassembly of Equipment: The Sperry Bridge Master E radar system, including the antenna and the Gyrotrak KVH system, must be removed and sent to Coast Guard technicians. The same goes for other equipment identified for replacement on the attached list. Equipment identified for re-installation must be stored in a secure manner.

11a.4.7 Removal of these pieces of equipment must be done in conjunction with other pieces of equipment to be removed on the vessel.

11a.4.8 Existing power cables must be inspected by the technical authority and reused if their condition is deemed satisfactory.

11a.4.9 Installation of Equipment: The new Sperry Vision Master radar and satellite compass must be installed according to instructions from the manufacturer and new OEM cable assemblies must be used.

11a.4.10 The existing radar shelf must be modified to accommodate installation of the radar processor; the screen; the controller and the power switch. The contractor must submit the drawings of the modification plan to the PO and the TA for review and comments. The contractor must incorporate these comments into the final modification plan.

11a.4.11 If the contractor, PO and the TA agree that the shelf cannot be suitably modified, a new shelf will be built. The drawings for the new shelf must be submitted to the PO and the TA for review and comments. The contractor must incorporate these comments into the final plan.

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- 11a.4.12** The new turning unit will be installed and interfaced with the radar. The radar antenna brackets may be reused, provided that the height of the new antenna does not exceed the height of the old one.
- 11a.4.13** Existing perforations can be used, but new glands must be installed.
- 11a.4.14** The Vision Master Chart Radar must receive the following navigation data: (Speed Over Ground), (Course Over Ground), (position) and (time) from the SAAB GPS, (True heading) and (rate of turn) from the Satellite Compass, AIS from SAAB AIS, and Relative wind from the anemometer.
- 11a.4.15** The Vision Master Chart Radar must transmit the data (Track Target) to the Aldebaran electronic chart.
- 11a.4.16** The VS131 Satellite Compass must be installed as per the instructions in Annex 11.B1_eng.
- 11a.4.17** The VS131 Satellite Compass must provide HDT and ROT data to the Radar; the electronic chart; the SAAB AIS and the 2 repeaters via the existing DD-20 interface.
- 11a.4.18** The gyro repeaters must be placed in front of the pilot (replacing the Magnavox MX10) and in the upper left corner of the navigator. Simrad IS20 displays must be used

11a.5 Proof of Performance

- 11a.5.1** All old equipment, including wiring, has been removed and disposed of as per instructions.
- 11a.5.2** All new equipment and wiring has been installed as per instructions.
- 11a.5.3** Openings in the cabin have been prepared and equipped with new sealing devices.
- 11a.5.4** Cables are fixed in existing cable troughs.
- 11a.5.5** The technical authority/manufacturer has approved the testing and trials system.
- 11a.5.6** Systems have passed the tests and trials.
- 11a.5.7** The system must be inspected and commissioned by a manufacturer's representative.

11a.6 Deliverables

- 11a.6.1** The technical authority must test the radar and gyro systems as indicated in sections 8.5 and 8.13 of the specification for installation of shipboard electronic equipment.
- 11a.6.2** The contractor must ensure that, at the end, the project manager receives a minimum of two printed copies of the installation and testing documents.
- 11a.6.3** The contract must provide two (2) printed copies of two technical and operating manuals for all of the equipment provided by the contractor.

11b DIGITAL AUDIO CONTROL SYSTEM INSTALLATION

11b.1 Identification

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11b.1.1 The contractor must supply and install one (1) new CFM Cobham Digital Audio Control System as detailed below.

11b.2 References

11b.2.1 Table

Item	Information
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Cobham Digital Audio Control System	-	ACP50-IKC - ACP5X Crimp Kit, Qty: 5
Supplier:	-	ACP51-102 - DACS ACP CABIN/8TX/NVIS GRN B, Qty: 1
EDMO Distributors, Inc.	-	ACP53-001 - DIGITAL ACP/NVIS/B/B, Qty: 4
12830 E Mirabeau Pkwy	-	AMU50-001 – AUDIO MANAGEMENT UNIT/DIGITAL, Qty: 1
Spokane, WA 99216	-	PIA01-001 – DACS PASSENGER ICS AMPLIFIER, Qty : 1
Tel: 1 (509) 535-8280	-	RM01-001 – REMOTE MEMORY MODULE FOR DACS, Qty : 1
Tel: 1 (800) 235-3300	-	55-06-000 – LEGEND CAP/BLANK HORIZONTAL, Qty: 28
Fax: 1 (509) 535-8266	-	55-06-AM – LEGEND CAP/AM HORIZONTAL, Qty: 5
Fax: 1 (800) 828-0623	-	55-06-CELL – LEGEND CAP/CELL HORIZONTAL, Qty: 5
www.edmo.com	-	55-06-DSC – LEGEND CAP/DSC HORIZONTAL, Qty: 5
	-	55-06-ECOM – LEGEND CAP/ECOM HORIZONTAL, Qty: 5
	-	55-06-FM1 – LEGEND CAP/FM1 HORIZONTAL, Qty: 5
	-	55-06-FM2 – LEGEND CAP/FM2 HORIZONTAL, Qty: 5
	-	55-06-PA – LEGEND CAP/PA HORIZONTAL, Qty: 5
	-	55-06-DF – LEGEND CAP/DF HORIZONTAL, Qty: 4
	-	AMU50-IKC – AMU50 CRIMP INSTALL KIT, Qty: 1
	-	PIA01-IKC – PIA01 CRIMP INSTALL KIT, Qty: 1
	-	RM01-IKC – RM01 CRIMP INSTALL KIT, Qty: 1
	-	20G 2C TEF - Shielded Tefzel MIL 27500 2 conductor 20AWG 500ft, Qty: 1
	-	22G 2C TEF – Shielded Tefzel MIL 27500 2 conductor 22AWG 500ft, Qty: 1
	-	20G TEF – Tefzel Wire Mil 22759/16 single conductor 20AWG 500ft, Qty: 1

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11b.2.2 Drawings

- 11b.2.2.1** The electronic reference drawings provided with this specification are for the purpose of providing basic information to the contractor. The Contractor should note that the drawings are not necessarily up to date and should not be considered absolutely exact.
- 11b.2.2.2** Using the reference drawings, specifications and installation instructions provided by the manufacturer, the contractor must prepare a set of working drawings, defining installation requirements, to wit; physical locations, power supply and interconnection of equipment.
- 11b.2.2.3** Electronic copies of working drawings must be submitted to both the PWGSC and the technical authority for review and comments. The contractor must incorporate these comments into the final working drawings.
- 11b.2.2.4** As-fitted drawings must be provided, indicating the exact physical layout and electrical connections of electronic systems updated upon acceptance of the vessel.
- 11b.2.2.5** As-fitted drawings must be divided by construct or compartment and must clearly indicate the physical location of the principal components of the system. Interconnection diagrams, showing detailed electrical connections among the system's equipment, must also be included.
- 11b.2.2.6** The contractor must provide two sets of as-fitted drawings in electronic format, the first in Adobe PDF format and the second in the latest AutoCAD format.
- 11b.2.2.7** All drawings below should be considered "Reference drawings". Refer to Annex 11.C.

Item	Information
LM820-020-GA	Sipumuin - General layout
LM820-340-BD	Sipumuin - Aldebaran electronic chart
LM820-400-In_1	Sipumuin - Audio / control system
LM820-400-In_2	Sipumuin - 28VDC switcher
LM820-400-In_3	Sipumuin - Audio / control system
LM820-401-IN	Sipumuin - Transceiver control
LM820-610-SS	Sipumuin - Intercom & P.A.

11b.3 Technical

- 11b.3.1** The contractor must supply and install one (1) new CFM Cobham Digital Audio Control System including all components listed in the Equipment Data section (11a.2.1), from the supplier noted and quotation number provided.

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11b.3.2 Supplier:

Ken Ribble
EDMO Distributors, Inc.
12830 E Mirabeau Pkwy
Spokane, WA 99216
Quotation: 198649 (for the Siyay)

11b.3.3 Disassembly of Equipment: All of the existing analogue NAT console must be removed and sent to Coast Guard technicians. The same goes for other equipment identified for replacement on the attached list. Equipment identified for re-installation must be stored in a secure manner

11b.3.4 Removal of these pieces of equipment must be done in conjunction with other pieces of equipment to be removed on the vessel.

11b.3.5 Existing power cables must be inspected by the technical authority and reused if their condition is deemed satisfactory.

11b.3.6 Installation of Equipment: The new Cobham Digital Audio Control System must be installed according to the contractor's instructions in the place of the equipment removed. The contractor will be responsible for the installation of all wiring and the physical assembly of all equipment and junction boxes. CCG technicians will be responsible for inspecting and commissioning the system.

11b.3.7 Existing mounting brackets must be used for equipment that will be installed in the center console of the control cabin. If additional brackets are required, they must be of the same type (avionic) as the existing ones.

11b.4 Proof of Performance

11b.4.1 All old equipment including wiring/cabling was removed and disposed of as specified

11b.4.2 All new equipment and cabling were installed as specified

11b.4.3 The through-hull fixtures were prepared and fitted with new sealing arrangements.

11b.4.4 Cables are secured into existing wire ways.

11b.5 Deliverables

11b.5.1 The system must be inspected and commissioned by CCG technicians.

11b.5.2 Operational and Technical manuals must be provided to the TA in accordance with the Manuals of the General Notes.

12 Propulsion Transmission Frame Installation

12.1 Identification

12.1.1 The existing port and starboard propulsion transmission frames must be replaced with new GSM transmission frames.

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12.2 References

Titre/Title	No. du dessin / Drg. No.	Emplacement / Location
Propulsion Transmission Assembly	WAP1-88-68-4002	Annex 12A
Transmission Frame Assembly	WAP1-88-68-4093/4	Annex 12B
Transmission Frame	HTWAP1-88-68-4091/2	Annex 12C
New Frame Installation Instructions	6053376-1	Annex 12D
Propulsion Transmission	SP 7134 Sect 2 Chap 8	Annex 12E

12.3 Technical

- 12.3.1** Prior to commencing removal, all equipment and systems identified for removal must be LOTO.
- 12.3.2** Prior to the start of work inside the engine bays, the ACV aerosol based fire suppression system must be LOTO and all engine space aerosol generators must be disconnected, removed and carefully stored in accordance with manufacturer's specifications for long term storage such that they are protected until reinstallation against damage, corrosion or the ingress of contaminants.
- 12.3.3** Prior to commencing removals, the location and configuration of all equipment, systems, and parts thereof identified for removal are to be recorded in order to facilitate their reinstallation as per original.
- 12.3.4** To the greatest extent possible, all removed equipment not identified for disassembly must remain as in intact as possible during removal and must remain so during the storage period until its reinstallation as per original.
- 12.3.5** All removed equipment must be stored in accordance with the ACV manufacturer's recommendations in order to avoid all possible damage resulting from long term storage.
- 12.3.6** All removed equipment must be stored as per the manufacturer's recommendations until reinstallation in order to be protected against contaminants, damage and corrosion and not to obstruct all other work included in this specification.
- 12.3.7** All existing defects exposed during the course of removals must be recorded and immediately brought to the attention of the TA for corrective action.
- 12.3.8** All damage to removed equipment and the ACV structure resulting from work carried out in this specification must be repaired at the Contractor's expense prior to the close of contract.
- 12.3.9** All piping systems containing fluid must be adequately drained and isolated prior to disconnection and remaining pipe work capped or plugged in order to avoid all leakage and spills and the ingress of contaminants.
- 12.3.10** All fluids and other hazardous materials recovered during all work carried out in this specification must be disposed of in accordance with applicable environmental regulations.

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- 12.3.11** All electrical cables, conduits, piping and other external surface protrusions resulting from equipment removal must be protected against damage and corrosion and to the greatest extent possible, must not obstruct all other work in this specification.
- 12.3.12** All resulting bulkhead and deck perforations must be temporarily sealed in order to prevent the ingress of all contaminants caused by the surface preparation and recoating process of engine bay internal surfaces.
- 12.3.13** The port and starboard propellers must be removed and stored by qualified CCG personnel trained by the propeller manufacturer in the removal, handling, storage and installation of Hartzell propellers. In consultation with the TA, the Contractor must provide the staging area, lifting equipment and all other services required to assist CCG personnel with the propeller removal, handling, storage and reinstallation.
- 12.3.14** The port and starboard propulsion transmission assemblies including the propulsion transmission drive cover, drive belts, top pulleys, pulley shafts and propeller shafts must be removed as per the manufacturer's recommendations as described in Annexes 12.
- 12.3.15** All removed propulsion transmission components must be cleaned and visually inspected for defects. All findings must be recorded and defects immediately reported to the TA for corrective action.
- 12.3.16** Following inspection, all removed propulsion transmission components must be stored as per the manufacturer's recommendations until reinstallation in order to be protected against contaminants, damage and corrosion and not to obstruct all other work included in this specification.
- 12.3.17** Following the removal of the port and starboard propulsion transmission assemblies, the port and starboard propulsion engines must be removed in accordance with section 6c of this specification.
- 12.3.18** The existing port and starboard propulsion transmission frame assemblies as described in annex 1B must be completely removed in preparation for the installation of new modified GSM transmission frame assemblies.
- 12.3.19** Following the removal of all propulsion engines and transmission components, the engine bearers must be thoroughly cleaned to bare metal and NDT inspected for structural defects in accordance with methods described in section 6 of this specification.
- 12.3.20** All engine bearer defects must be recorded and immediately reported to the TA for corrective action.
- 12.3.21** The Contractor must provide engineered TCMS approved procedures for the repair to original condition of the top flange fitted to the starboard outboard engine bearer forward extension as illustrated on Annex 12F.
- 12.3.22** The Contractor must repair the top flange fitted to the starboard outboard engine bearer forward extension to original condition in accordance with the CSM engineered procedures using new CSM materials.
- 12.3.23** The four GSM engine bearer extension brackets as illustrated in Annexes 12G, 12H and 12I must be modified in accordance with Annex 12I to accommodate the routing of

existing cables and hoses. Associated cables, hoses and other obstructions must be disconnected and reconnected as necessary to complete the bracket installation as specified in Annex 12D.

- 12.3.24** At the completion of all structural repair and recoating work inside the port and starboard propulsion engine bays, the new GSM port and starboard propulsion transmission frame assemblies as described in annex 12C must be installed into their respective propulsion engine bays in accordance with the instructions in Annex 12D. All installation settings and adjustments as applicable must be recorded.
- 12.3.25** At the completion of all work associated to the port and starboard propulsion engine bays and the thorough curing of all recoated surfaces, all removed propulsion transmission components must be reinstalled as per original and in accordance with manufacturer's specifications and in consultation with the TA and annexes 12A and 12E using new CSM OEM cadmium plated fasteners, isolators, gaskets and seals where applicable. All installation settings and adjustments must be recorded.

12.4 Proof of Performance

- 12.4.1** Immediately following the removal of the port and starboard propulsion transmission assemblies, the Contractor must afford the TA and the attending TCMS surveyor the opportunity to visually inspect all transmission assembly components.
- 12.4.2** Prior to the reinstallation of the port and starboard propulsion transmission assemblies, the Contractor must afford the TA and the attending TCMS surveyor the opportunity to visually inspect the newly installed transmission frame assemblies.
- 12.4.3** Prior to the reinstallation of the port and starboard propulsion engines, the Contractor must afford the TA and the attending TCMS surveyor the opportunity to visually inspect the reinstalled propulsion transmission assemblies.
- 12.4.4** Testing of the system is to be completed by CG ACV engineers. Prior to the close of contract, a full functionality test run of the port and starboard propulsion transmission assemblies for a minimum 30 minute period per engine must be performed. All operational parameters and findings made during the test must be recorded. All defects must be corrected prior to the close of contract.
- 12.4.5** The Contractor must afford the TA and the attending TCMS surveyor the opportunity to witness the 30 minute test running of both propulsion transmission assemblies.

12.5 Deliverables

- 12.5.1** A detailed report of all findings made during the visual inspection of all removed propulsion transmission components must be submitted to the TA prior to the close of contract.
- 12.5.2** A detailed report of all settings and adjustments made during the installation of the new port and starboard propulsion transmission frames must be submitted to the TA prior to the close of contract.
- 12.5.3** A detailed report of all recorded parameters and findings made during the test run must be submitted to the TA prior to the close of contract.

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13 Lift Fan Transmission service

13.1 Identification

13.1.1 The port and starboard lift fans and transmission assemblies must be removed in preparation for local hull repairs and recoating.

13.2 References

Titre/Title	No. du dessin/Drg. No.	Emplacement/Locatio n
Lift Fan Transmission	SP 7134 Sect 2 Chap 10	Annex 13A
Lift Engine Water Separator Installation	WAP1-88-50-4011	Annex 13B
Lift Engine Cooling Fan Installation	WAP1-88-50-4013	Annex 13C
Lift Engine Shaft U/J Assembly	WAP1-88-50-4054	Annex 13D
U/J Shaft Assembly	WAP1-88-68-4055	Annex 13E
Assembly and Installation of Lift Transmission	WAP1-88-68-4001	Annex 13F

13.3 Technical

- 13.3.1** Prior to commencing removal, all equipment and systems identified for removal must be LOTO.
- 13.3.2** Prior to the start of work inside the engine bays, the ACV aerosol based fire suppression system must be LOTO and all engine space aerosol generators must be disconnected, removed and carefully stored in accordance with manufacturer's specifications for long term storage such that they are protected until reinstallation against damage, corrosion or the ingress of contaminants.
- 13.3.3** All necessary precautions must be taken to maintain the true alignment of the ACV's machinery throughout the dry-docking period. Any misalignment resulting from work in this specification must be corrected at the contractor's expense.
- 13.3.4** Prior to commencing removals, the location and configuration of all equipment, systems, and parts thereof identified for removal are to be recorded in order to facilitate their reinstallation as per original. All components must be clearly labelled with respect to their original location such that they are reinstalled as per original.
- 13.3.5** To the greatest extent possible, all removed equipment not identified for disassembly must remain as intact as possible during removal.
- 13.3.6** All existing defects exposed during the course of removals must be recorded and immediately brought to the attention of the PO for corrective action.

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- 13.3.7** All damage to removed equipment and the ACV structure resulting from work carried out in this specification must be repaired at the Contractor's expense prior to the close of contract.
- 13.3.8** All piping systems containing fluid must be adequately drained and isolated prior to disconnection and remaining pipe work capped or plugged in order to avoid all leakage and spills and the ingress of contaminants.
- 13.3.9** All fluids and other hazardous materials recovered and identified for disposal must be disposed of in accordance with applicable environmental regulations.
- 13.3.10** All electrical cables, conduits, piping and other external surface protrusions resulting from equipment removal must be protected against damage and corrosion and to the greatest extent possible, must not obstruct all other work in this specification.
- 13.3.11** All resulting bulkhead and deck perforations must be temporarily sealed in order to prevent the ingress of all contaminants caused by the surface preparation and recoating process of all internal surfaces.
- 13.3.12** As per Annexes 13A to 13F, all port and starboard lift fan and bow thruster fan transmission drive train components extending forward from their respective engine PTO's (i.e. forward of the Kusel coupling), must be disconnected from their respective lift engines and the ACV structure and removed from their respective bays.
- 13.3.13** All removed port and starboard lift fan and bow thruster fan transmission drive train components must be packaged and secured on pallets in preparation for shipping to a CCG facility for servicing as arranged by the PO. All lift transmission components must be packaged such that they are protected from damage, corrosion and the ingress of contaminants during the transit.
- 13.3.14** All lift fan drive shaft splines are secured to the fans through the use of Huntsman Araldite Epoxy. Separation of the splined joints is facilitated by heat application using a propane torch.
- 13.3.15** At the completion of all work associated to the port and starboard lift and bow thruster transmission bays, the thorough curing of all recoated surfaces, and the return of all serviced lift fan and bow thruster fan transmission components, the latter must be reinstalled as per annexes 13A to 13F as per original and in accordance with manufacturer's specifications using new CSM OEM cadmium plated fasteners, isolators, gaskets and seals where applicable. All installation settings and adjustments as applicable must be recorded. The Contractor is responsible to insure the alignment is correct as per the manufacture's recommendations.

13.4 Proof of Performance

- 13.4.1** The Contractor must afford the PO the opportunity to visually inspect all lift fan and bow thruster fan transmission components immediately following their removal.
- 13.4.2** The Contractor must afford the PO the opportunity to visually inspect all lift fan and bow thruster fan transmission bays following the removal of all transmission components and prior to the start of structural repairs.
- 13.4.3** The Contractor must afford the TA and the attending TCMS surveyor the opportunity to visually inspect the reinstalled lift fan and bow thruster fan transmission components.

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13.4.4 Prior to the close of contract, a full functionality test run of all reinstalled equipment for a minimum 30 minute period must be performed. All operational parameters and findings made during the test must be recorded. All defects must be corrected at the contractor's expense prior to the close of contract.

13.4.5 The Contractor must afford the PO and the attending TCMS surveyor the opportunity to witness the 30 minute test running of the port and starboard lift fan and bow thruster fan transmission assemblies.

13.5 Deliverables

13.5.1 A detailed report of all findings made during the removal of all port and starboard lift fan and bow thruster fan transmission assembly components must be submitted to the PO prior to the close of contract.

13.5.2 A detailed report of all settings and adjustments made during the installation of the port and starboard lift fan and bow thruster fan transmission assemblies must be submitted to the PO prior to the close of contract.

13.5.3 A detailed report of all recorded parameters and findings made during the test run must be submitted to the PO prior to the close of contract.

14 Well Deck Drains

14.1 Identification

14.1.1 The contractor must design and produce drawings for the installation of port and starboard well deck drains. The design is to be approved by TCMS. The contractor is to produce construction drawings and complete the installation.

14.2 Reference

Titre/Title	No. du dessin /Drg. No.	Emplacement /Location
Well Deck Drain System	WAP1-88-H-4069	Annex 14A

14.3 Technical

14.3.1 The Contractor must supply TCMS approved, TP 5579 compliant certified engineered plans in AutoCad and PDF format for the installation of port and starboard well deck drains.

14.3.2 The new well deck drains must be suitably located between frames 3.1 and 4 and must drain into the port and starboard fan bays located between frames 4 and 5.

14.3.3 Annex 14A must be referred to as required for technical information associated to the existing well deck drains fitted forward of frame 7.1.

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- 14.3.4** Prior to entry and the start of hot work, all associated enclosed spaces must be prepared and certified safe for entry and for hot work in accordance with CLC regulations.
- 14.3.5** All obstructions interfering with the completion of all work in this section must be temporarily removed and reinstalled at the completion of all work in this section.
- 14.3.6** New port and starboard well deck drains must be installed in accordance with the CSM engineered plans using all new CSM materials.
- 14.3.7** Welding procedures must be consistent with the procedures described in section 6 of this specification.

14.4 Proof of Performance

- 14.4.1** At the completion of all work, the Contractor must afford the PO and the attending TCMS surveyor the opportunity to inspect the new well deck drains installation and to witness a full functionality test.

14.5 Deliverables

- 14.5.1** Prior to the close of contract, the Contractor must provide to the PO all new well deck drains drawings approved and as fitted and revised applicable ACV drawings in accordance with section 2 of this specification.

15 Well Deck tie Down Points Servicing

15.1 Identification

- 15.1.1** All well deck tie down assemblies must be removed, inspected and reinstalled.

15.2 References

Titre/Title	No. du dessin/Drg. No.	Emplacement/Locatio n
Well Deck Tie Down Points Unit 37	WAP1-88-H-4047	Annex 15A

15.3 Technical

- 15.3.1** Prior to removal, the Contractor must ensure that all well deck tie down anchor plates are individually stamped to clearly identify their positioning on the well deck. All existing anchor plates and new anchor plates must be clearly identified with a stamp prior to reinstallation of the tie down assemblies.
- 15.3.2** Prior to removal, the Contractor must take all necessary precautions to ensure that all assemblies are reinstalled as per original.

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- 15.3.3** All 40 deck tie down assemblies must be completely removed from the well deck.
- 15.3.4** All Masterlink links (item 3 of Annex 15A) must be replaced with new GSM links as per original.
- 15.3.5** All fastener hardware (items 9, 10, 11, 12, 13, 14 and 15 of Annex 15A) must be replaced with new GSM hardware of equivalent grade.
- 15.3.6** With the exception of all GSM components identified in 15.3.4 and 15.3.5, all 40 deck tie down assembly components must be cleaned, laid out for inspection and reinstalled or replaced as required and as per original and in accordance with Annex 15A.
- 15.3.7** The Contractor must clean for inspection all above and below well deck areas in proximity of the removed tie down assemblies.
- 15.3.8** The Contractor must perform a comprehensive visual inspection of all deck tie down reusable components and their associated above and below well deck areas for damage, wear and other abnormalities.
- 15.3.9** All signs of damage, wear and abnormalities must be immediately brought to the attention of the PO for remedial action.
- 15.3.10** All inspection findings must be documented and the Contractor must submit to the PO without delay, a complete list of all condemned components to be replaced with new GSM components. All condemned components must be disposed of in accordance with applicable environmental regulations.
- 15.3.11** Prior to the reinstallation of all tie down assemblies, the Contractor must prepare and coat the associated above deck areas in accordance with the coating manufacturer's specifications as indicated in Annex 6.2A.
- 15.3.12** Following the cleaning and inspection of all deck tie down components, the Contractor must reinstall all deck tie down assemblies as per original and in accordance with Annex 15A using the new GSM components identified in 15.3.4 and 15.3.5.
- 15.3.13** Upon reinstallation of all well deck tie down assemblies, each anchor plate must be insulated from the deck through the use of a thin CSM resin board and sealant.
- 15.3.14** All dissimilar metals must be wet assembled using a corrosive inhibitor sealant in accordance with note 17 in Annex 15A.

15.4 Proof of Performance

- 15.4.1** Following the removal of all deck tie down assemblies, the Contractor must afford the PO the opportunity to inspect all tie down components and their associated above and below well deck areas.
- 15.4.2** Prior to load testing, the Contractor must afford the TA the opportunity to visually inspect all 40 newly installed well deck tie down assemblies.
- 15.4.3** Following the reinstallation of all 40 well deck tie down assemblies, the Contractor must perform a WLL test to 6000 lbs on all 40 well deck tie down assemblies in accordance with Annex 15A. The Contractor must afford the TA the opportunity to witness all WLL testing.

15.5 Deliverables

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15.5.1 Immediately following the inspection of all tie down components, the Contractor must submit to the TA a comprehensive list of all condemned components to be replaced.

15.5.2 Prior to the close of contract, the Contractor must submit to the PO WLL test certificates clearly identifying each of the 40 reinstalled well deck tie down assemblies in accordance with section 2 of this specification.

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ANNEX B

BASIS OF PAYMENT PRICE

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

B1 Contract Firm Price

A)	Known Work For work as stated in Article 7. 1, Specified in Annex "A" and detailed in the attached Cumulative Pricing Data Sheets, for a FIRM PRICE of:	\$
B)	GST / HST as applicable of line a) only	\$
C)	Cost of Financial Security as per 7.14	\$
D)	Total Firm Price GST/HST Included:	\$

B2 Unscheduled Work

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

"Number of hours (to be specified by Canada and accepted by Contractor as per the procedures of this Contract) X \$ _____, being the Contractor's firm hourly charge-out labour rate which includes overhead, consumables, and profit, plus net laid-down cost of materials to which will be added a mark-up of 10%, plus applicable taxes, of the total cost of material and labour. This rate shall be a blended rate for all classes of labor, engineering and foreperson.

The firm hourly charge-out labour rate and the material mark-up will remain firm for the duration of the Contract and any subsequent amendments."

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

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

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

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

Pro-rated Prices Unscheduled Work

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

B3 Overtime

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

Payment for authorized overtime will be calculated as follows:

Time and One-Half Rate: \$ _____ / per person hour
Double Time Rate: \$ _____ / per person hour

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

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

** Regular time is defined as an 8 hour work day*

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

**** Overtime Double Time Rate is defined as Sundays and Statutory Holidays*

B4 Daily Services Fee

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

The firm daily services fee is:

- (a) For a Working Day: \$ _____
(b) For a non-Working Day: \$ _____

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

B5 Vessel, Refit, Repair or Docking Cost

The following costs must be included in the price:

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

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

3. Field Service Representatives/Supervisory Services: include all costs for field service representatives/supervisory services including manufacturers' representatives, engineers, etc. The Contractor is responsible for the performance of all subcontractors and FSRs.

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

4. Removals: include all costs for removals necessary to carry out the Work and will be the responsibility of the successful Bidder whether or not they are identified in the specifications, except those removals not apparent when viewing the vessel or examining the drawings. The successful Bidder will also be responsible for safe storage of removed items and reinstalling them on completion of the Work. The successful Bidder will be responsible for renewal of components damaged during removal.
5. Sheltering, Staging, Cranage and Transportation: include the cost of all sheltering, staging including handrails, cranage and transportation to carry out the Work as specified.

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

B6 Pricing Data Sheets

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

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ANNEX C
to PART 5 - BID SOLICITATION

FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY - CERTIFICATION

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

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

(http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page)

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

Complete both A and B.

A. Check only one of the following:

- () A1. The Bidder certifies having no work force in Canada.
- () A2. The Bidder certifies being a public sector employer.
- () A3. The Bidder certifies being a federally regulated employer being subject to the *Employment Equity Act*.
- () A4. The Bidder certifies having a combined work force in Canada of less than 100 employees (combined work force includes: permanent full-time, permanent part-time and temporary employees [temporary employees only includes those who have worked 12 weeks or more during a calendar year and who are not full-time students]).
- A5. The Bidder has a combined workforce in Canada of 100 or more employees; and
- () A5.1. The Bidder certifies already having a valid and current Agreement to Implement Employment Equity (AIEE) in place with ESDC-Labour.

OR

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

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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)

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ANNEX D

INSURANCE REQUIREMENTS

D.1 Ship Repairers' Liability Insurance

1. The Contractor must obtain Ship Repairer's Liability Insurance and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$10,000,000 per accident or occurrence and in the annual aggregate.
2. The Ship Repairer's Liability insurance must include the following:
 - a. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.
 - b. Waiver of Subrogation Rights: Contractor's Insurer to waive all rights of subrogation against Canada as represented by Environment Canada and Public Works and Government Services Canada for any and all loss of or damage to the vessel, however caused.
 - c. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of cancellation.
 - d. Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
 - e. Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

D.2 Commercial General Liability Insurance

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$10,000,000 per accident or occurrence and in the annual aggregate.
2. The Commercial General Liability Insurance policy must include the following:
 - (a) Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.
 - (b) Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.
 - (c) Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.
 - (d) Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to

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each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

(e) Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.

(f) Employees and, if applicable, Volunteers must be included as Additional Insured.

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

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

(i) If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.

(j) Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.

(k) Sudden and Accidental Pollution Liability (minimum 120 hours): To protect the Contractor for liabilities arising from damages caused by accidental pollution incidents.

D.3 Environmental Impairment Liability Insurance

1. The Contractor must obtain Contractor's Pollution Liability insurance, providing coverage for Asbestos Abatement, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$5,000,000 per accident or occurrence and in the annual aggregate.

2. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.

3. The Contractor's Pollution Liability insurance policy must include the following:

- a. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.
- b. Notice of Cancellation: The Insurer will endeavor to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
- c. Separation of Insureds: The policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
- d. Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
- e. Incidental Transit Extension: The policy must extend to losses arising from any waste, products or materials transported, shipped, or delivered via any transportation mode to a location beyond the boundaries of a site at which the Contractor or any entity for which

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

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

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

For other provinces and territories, send to:

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

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

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ANNEX E

WARRANTY

Warranty Procedures

1. Scope

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

2. Reporting Failures With Warranty Potential

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

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

3. Procedures

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

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

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

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

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

b. In the event that the Contractor disputes the claim as a warranty defect, or agrees to share, the contractor is to complete Part 2 and 3 of the Warranty Claim Form with the appropriate information and

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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.

4. Liability

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

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

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

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

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

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

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Public Works and Government
Services Canada

Travaux publics et Services
gouvernementaux Canada

Warranty Claim

Réclamation De Garantie

Vessel Name – Nom de navire	File No. – N° de dossier	Contract No. - N ° de contrat
Customer Department – Ministère client	Warranty Claim Serial No. Numéro de série de réclamation de garantie	
Contractor – Entrepreneur	<div>Effect on Vessel Operations</div> <div>Effet sur des opérations de navire</div> <div>Critical Degraded Operational Non-operational</div> <div>Critique Dégradé Opérationnel Non-</div> <div>opérationnel</div>	

1. Description of Complaint – Description de plainte

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

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

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

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

Date of Corrective Action - Date de modalité de reprise

Client Name and Signature - Nom et signature de client

Date

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

Signature – Signature

Date

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ANNEX F

PROCEDURE FOR PROCESSING UNSCHEDULED WORK

1. Purpose

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

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

2. Definitions

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

3. Procedures

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

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

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

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

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

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

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

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

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

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

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

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"A", and bearing a notation that this form is replacing and canceling the form having the same Serial Number with the suffix "A".

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

4. Amendment to Contract or Formal Agreement

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

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ANNEX G

QUALITY CONTROL/INSPECTION

G1 Quality Control Plan

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

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

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

G2 Inspection and Test Plan (ITP):

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

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

2. Coding:

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

i. Prefixes for Inspections, Test and Trials:

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

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

c. Cross reference to a verification document number

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G3 Inspection and Test Plan Criteria:

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

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

4. Contractor Imposed Testing:

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

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

G4 Conduct of Inspection

1. Inspections must be conducted in accordance with the ITP and as detailed in G4.
2. The Contractor must provide its own staff or subcontracted staff to conduct inspections, tests and trials; excepting that Technical Authority or Inspection Authority personnel may be designated in the specifications, in which case the Contractor must ensure that its own staff are provided in support of such inspection/test/trial.
3. The Contractor must ensure that the required conditions stated in the ITP prevail at the commencement of, and for the duration of, each inspection/test/trial.
4. The Contractor must ensure that personnel required for equipment operation and records taking during the inspection/test/trial are briefed and available at the start and throughout the duration of the inspection/test/trial. Tradesmen or FSRs who may be required to effect minor changes or adjustments in the installation must be available at short notice.
5. The Contractor is to coordinate the activities of all personnel taking part in each inspection/test/trial and ensure that safe conditions prevail throughout the inspection/test/trial.

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G5 Inspection Records and Reports

1. The Contractor on the inspection record, test or trials sheets as applicable must record the results of each inspection. The Contractor must maintain files of completed inspection records consistent with the Quality Standard and its Quality Plan for this project.
2. The Contractor's QC representative (and the FSR when required) must sign as having witnessed the inspection, test or trial on the inspection record. The Contractor must forward originals of completed inspection records, together with completed test(s) and/or trials sheets to the Inspection Authority as they are completed.
3. Unsatisfactory inspection/test/trial results, for which corrective action cannot be completed during the normal course of the inspection/test/trial, will require the Contractor to establish and record the cause of the unsatisfactory condition to the satisfaction of the Inspection Authority. Representatives of Canada may assist in identification where appropriate.
4. Corrective action to remove cause of unsatisfactory inspections must be submitted to the Inspection Authority in writing by the Contractor, for approval before affecting such repairs and rescheduling of the unsatisfactory inspection/test/trial. Such notices must be included in the final records passed to the Inspection Authority.
5. The Contractor must undertake rectification of defects and deficiencies in the Contractor's installation or repair as soon as practicable. The Contractor is responsible to schedule such repairs at its own risk.
6. The Contractor must reschedule unsatisfactory inspections after any required repairs have been completed.
7. Quality Control, Inspection and Test records that substantiate conformance to the specified requirements, including records of corrective actions, must be retained by the Contractor for three (3) years from the date of completion or termination of the Contract and must be made available to the Inspection Authority upon request.

G6 Inspection and Trials Process

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

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

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

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designated Inspection Authority of when the work will be available for inspection, sufficiently in advance to permit the designated Inspection Authority to arrange for the appropriate inspection.

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

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

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

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

3. Inspection Non-conformance report

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

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

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

4. Tests, Trials, and Demonstrations

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

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

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

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- d. Where the Specifications do not contain specific performance requirements for any component, equipment, sub-system or system, the Contractor must demonstrate such component, equipment, sub-system or system to the satisfaction of the Inspection Authority.
- e. The Contractor must submit its Inspection and Test Plan as detailed in G2.
- f. The Contractor must co-ordinate each test, trial and demonstration with all interested parties, including the Inspection Authority; Contracting and Technical Authorities; regulatory authorities; Classification Society; Sub-contractors; etc. **The Contractor must provide the Inspection Authority and other Crown Authorities with a minimum of five (5) Working Days notice of each scheduled test, trial, or demonstration.**
- g. The Contractor must keep written records of all tests, trials, and demonstrations conducted as detailed in G5. The Contractor may utilize the **PWGSC STANDARD TESTS & TRIALS RECORD SHEETS** which can be customized by the Contractor to suit individual test or trial requirements. These Record Sheets are available from the Inspection Authority in digital format.
- h. The Contractor must in all respects be responsible for the conduct of all tests and trials in accordance with the requirements of the Contract.
- i. The Inspection Authority and the Technical Authority reserve the right to defer starting or continuing with any sea trials for any reasonable cause including but not limited to adverse weather, visibility, equipment failure or degradation, lack of qualified personnel and inadequate compliance with safety standards.

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ANNEX H

Financial Bid Presentation Sheet

H1 Price for Evaluation

H1 A)	Known Work For work as stated in Part 1 Clause 1.2 (a), Specified in Annex "A" and detailed in the attached Cumulative Pricing Data Sheets Appendix 2 of Annex "H", for a FIRM PRICE of: - Equal to \$3,100,000.00 up to \$3,545,000.00 without exceeding. - Less than \$3,100,000.00 only if all 13 items are priced with associated maximum of 380 points.	\$ _____
B)	B1. Unscheduled Work Contractor Labour Cost: Estimated labour hours at a firm Charge-out Labour Rate, including overhead and profit for evaluation purpose only: 5,000 person hours X \$ _____ per hour for a PRICE of: See Article H2.1 and H2.2 below. B2. Overtime premium for time and one half: Estimated hours for evaluation purposes only: 500 person hours X \$ _____ per hour for a PRICE of: See Article H3 Below. B3. Overtime premium for double time: Estimated hours for evaluation purposes only: 300 person hours X \$ _____ per hour for a PRICE of: See Article H3 below. <i>Note: Overtime Premium represents the difference between the applicable overtime rate at H3 a) and H3 b) and the charge out rate quoted at H1 B1</i> * Regular time is defined as an 8 hour work day ** Overtime B2 is defined as time in excess of the regular time,. *** Overtime B3 is defined as Sundays and Statutory Holidays.	\$ _____ \$ _____ \$ _____
C)	Daily Service Fees for evaluation purpose only As per Clause H4 i) Ten (10) Working Days X \$ _____ firm daily service fee = \$ _____ ii) Four (4) non-Working Days X \$ _____ firm daily service fee	\$ _____ \$ _____

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	= \$ _____	
D)	Vessel Transfer Cost as Per Clause H7 Proposed shipyard/ship repair facility: _____	\$ _____
E)	Cost of Financial Security as per 6.2	\$ _____
F)	CUMULATIVE POINTS (detailed in the attached Cumulative Pricing Data Sheets Appendix 2 of Annex "H".)	
G)	EVALUATION PRICE Applicable Taxes Excluded, [A + B + C+ D + E]: For an EVALUATION PRICE of (Applicable Taxes excluded):	\$ _____
H)	Price Per Point = (G) / (F) Lowest price per point will be awarded the Contract.	\$ _____/Point

H2 Unscheduled Work

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

"Number of hours (to be negotiated) X \$ _____, being the Contractor's firm hourly charge-out labour rate which includes overhead, consumables, and profit, plus net laid-down cost of materials to which will be added a mark-up of 10 percent, plus Applicable Taxes, if applicable, of the total cost of material and labour. This rate shall be a blended rate for all classes of labor, engineering and foreperson. The firm hourly charge-out labour rate and the material mark-up will remain firm for the duration of the Contract and any subsequent amendments."

H2.1: Notwithstanding definitions or usage elsewhere in this document, or in the Contractor's Cost Management System, when negotiating Hours for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package.

Elements of Related Labour Costs identified in H2.2 below, will not be negotiated, but will be compensated for in accordance with Note H2.2. It is therefore incumbent upon the bidder to have bid appropriately which will result in fair compensation, regardless of their Cost Management System.

H2.2: Allowance for Related Labour Costs such as: Management, all Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Certification Inspecting and Reporting, and Estimating and preparing unscheduled work Submissions will be included as Overhead for the purposes of determining the Charge-out Labour Rate entered in line H2 above.

H2.3: The 10% mark-up rate for materials will also apply to subcontracted costs. The mark-up rate includes any allowance for material and subcontract management not allowed for in the Chargeout Labour Rate. The Contractor will not be entitled to a separate labour component for the purchase and handling of materials or subcontract administration.

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Pro-rated Prices Unscheduled Work

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

H3 Overtime

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

Payment for authorized overtime will be calculated as follows:

- a) Time and One-Half Rate: \$ _____ / per person hour
- b) Double Time Rate: \$ _____ / per person hour

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

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

* Regular time is defined as an 8 hour work day

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

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

H4 Daily Services Fee

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

The firm daily services fee is:

- (a) For a Working Day: \$ _____
- (b) For a non-Working Day: \$ _____

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

H5 Vessel, Refit, Repair or Docking Cost

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The following costs must be included in the price:

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

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

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

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

4. Removals: include all costs for removals necessary to carry out the Work and will be the responsibility of the successful Bidder whether or not they are identified in the specifications, except those removals not apparent when viewing the vessel or examining the drawings. The successful Bidder will also be responsible for safe storage of removed items and reinstalling them on completion of the Work. The successful Bidder will be responsible for renewal of components damaged during removal.
5. Sheltering, Staging, Cranage and Transportation: include the cost of all sheltering, staging including handrails, cranage and transportation to carry out the Work as specified.

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

H6 Vessel Transfer Costs

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

(a) The Bidder must provide the location of the shipyard/ship repair facility where it proposes to perform the Work together with the applicable vessel transfer cost from the list provided under paragraph 2 of this clause shall be entered into Table H1:

(b) If the list in paragraph 2 of this clause does not provide the shipyard/ship repair location where the Bidder intends to perform the Work, then the Bidder must advise the Contracting Authority, in writing, at least 5 calendar days before the bid closing date, of its proposed location for performing the Work. The Contracting Authority will confirm to the Bidder, in writing, at least 3 calendar days before the bid closing date, the location of the shipyard/ship repair and the applicable vessel transfer cost.

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

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

Vessel: CCGS Sipu Muin
Home port: Trois-Rivières, QC

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

Company	City/Province	Unmanned Transfer Cost
Aecon Atlantic Industrial	Pictou, NS	\$8,247
Caraquet Marine Industry Ltd.	Caraquet, NB	\$9,626
Oceans Industries Inc.	Saint-Bernard-Sur-Mer, QC	\$2,369
Chantier Forillon	Gaspé, QC	\$14,689
Chantier Matane	Matane, QC	\$4,448
Davie Industries Inc.	Levis, QC	\$1,404
Heddle Marine	Hamilton, ON	\$7,181
Hike Metal Products Ltd	Wheatley, ON	\$11,990
MetalCraft Marine Inc.	Kingston, ON	\$15,703
Verreault Navigation Inc.	Les Mechains, QC	\$7,968

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ANNEX H - APPENDIX 1

PRICING DATA SHEETS (to form part of Annex B of the Resulting Contract)

Note: Bidders not required to fill out greyed out
Sections

COMPANY NAME:

Item	Spec. #	Description	Total Hours	Total Labour Cost	Total Material Cost	Total FSR & Sub-Cont'rs Cost	Unit Cost	Total Firm Price
1	2.4 - 2.7.5	Intro/Miscellaneous/Mechanical Components	hrs	\$	\$	\$		
	2.14	Pre-work and Post-Work Inspection	hrs	\$	\$	\$		
	2.15	Fire Protection	hrs	\$	\$	\$		
	2.16	Regulatory Inspections and/or Class Surveys	hrs	\$	\$	\$		
	2.17	Test Results & Data Package	hrs	\$	\$	\$		
	2.20	Storage Space	hrs	\$	\$	\$		
	2.22	Contractor Inspections and Protection of Equipment and the Worksite	hrs	\$	\$	\$		
	2.26	Asbestos Containing Materials	hrs	\$	\$	\$		
	2.30 - 2.37	Documentation / Data Book / Test Inspection	hrs	\$	\$	\$		
	2.38 - 2.39	Documentation-Drawings	hrs	\$	\$	\$		
	2.41 - 2.43	Documentation - Manuals	hrs	\$	\$	\$		
	2.44	Identification - Nameplates	hrs	\$	\$	\$		
	2.45	Identification Wire labelling	hrs	\$	\$	\$		

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	2.46	Production Schedule	hrs	\$	\$	\$		
	2.4 - 2.46	Total Spec 1 Requirement		\$	\$	\$		\$
2	4.2 - 4.6	Berthing and Mooring / Services	hrs	\$	\$	\$		\$
	4.7 - 4.8	Office Services / Parking	hrs	\$	\$	\$		\$
	5-5.5.1	Dry -Docking and refloating	hrs	\$	\$	\$		\$
	4.2 - 5.5.1	Total Spec 2 Requirement		\$	\$	\$		\$
3	6- 6.5.4	Shell & Structure	hrs	\$	\$	\$		\$
	6a - 6a1.5.1	Exterior Hull Coating	hrs	\$	\$	\$		\$
	6b - 6b.5.1	Interior Hull Cleaning	hrs	\$	\$	\$		\$
	6c - 6c.5.2	Engine Removal and Reinstallation	hrs	\$	\$	\$		\$
	6d - 6d.5.1	Watertight Areas	hrs	\$	\$	\$		\$
	6e - 6e.5.1	Engine Bay Hatch Covers	hrs	\$	\$	\$		\$
	6f - 6f.5.1	Skirt Replacement	hrs	\$	\$	\$		\$
	6g - 6g.5.1	Fan Intake Bay Stairs	hrs	\$	\$	\$		\$
	6 - 6g.5.1	Total Spec 3 Requirement		\$	\$	\$		\$
4	7 - 7.5.2	Control Cabin Windows	hrs	\$	\$	\$		\$
	7a -	Mast Winch Installation		\$	\$	\$		\$

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	7a.5.3		hrs					
	7b – 7b.5.1	Window Wiper Replacement	hrs	\$	\$	\$		\$
	7.0 – 7.5.1	Total Spec 4 Requirement	hrs	\$	\$	\$		\$
5	8 – 8.5.1	Main Cabin Insulation Replacement	hrs	\$	\$	\$		\$
6	9 – 9.5.7	Engine Control System Modification	hrs	\$	\$	\$		\$
7	10 – 10.5.3	Fuel System valve replacement and overhauling of fuel pumps	hrs	\$	\$	\$		\$
8	11 – 11.5.1	Electronic and Navigation Equipment Wiring	hrs	\$	\$	\$		\$
9	12 – 12.5.3	Propulsion Transmission Frame Installation	hrs	\$	\$	\$		\$
10	13 – 13.5.1	Fuel Bladder Replacement	hrs	\$	\$	\$		\$
	13a – 13a.5.1	Fuel Sensor Relocation	hrs	\$	\$	\$		\$
	13 – 13a.5.1	Total Spec 10 Requirement	hrs	\$	\$	\$		\$
11	14 – 14.5.3	Lift Fan Transmission service	hrs	\$	\$	\$		\$
12	15 – 15.5.1	Well Deck Drains	hrs	\$	\$	\$		\$
13	16 – 16.5.2	WellDeck tie Down Points Servicing	hrs	\$	\$	\$		\$

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ANNEX H - APPENDIX 2

CUMULATIVE PRICING SHEET FOR EVALUATION

NOTES TO BIDDERS:

(1) Bidders are to sequentially enter their bids in the CUMULATIVE PRICING DATA SHEET, respecting the order of entries, and continue entering their pricing and cumulative pricing for each spec item. Bidders continue entering their pricing/cumulative pricing on the spec items with the intention of getting their bid as close to \$17,000,000 (without exceeding), and no less than \$16,100,000. If the bidder bids a firm Price on all 13 Work Items with a maximum total of 380 points, a total Firm Price less than \$ 16,100,000 will be accepted.

(2) Skipping an entry of pricing/ cumulative pricing in the sequence will result in the bid being non responsive.

(3) Bidders are reminded that at no time can their cumulative pricing exceed the exposed budget amount of \$17,000,000.00. Bidders are to stop entering pricing/cumulative pricing information in appendix 2 at the point where their bid gets as close to the exposed budget (without exceeding). If the cumulative price exceeds \$17,000,000.00 the bid will be considered non responsive.

(4) The bidder cannot stop bidding on spec items until a minimum cumulative price of \$16,100,000. is reached. If the minimum cumulative price does not exceeds \$16,100,000.00 the bid will be considered non responsive.

(5) 10 points will be assigned to each spec item that the bidder has bid on. Bidders are reminded not to enter uncharacteristically low bid amounts on spec items that they do not intend on completing during the refit to acquire more cumulative points. The 1205 Acceptance process will remove two times the value to complete the spec items from the Contract Value (not two times the bid value).

(6) At the point where the bidder stops bidding, the cumulative bid price (not exceeding \$17,000,000.00) is to be entered into Annex H1 - Price for Evaluation, Item A Known Work.

(7) At the point where the bidder stops bidding, the cumulative points associated with the spec item where the bidding stops is to be entered into Annex H1 - Price for Evaluation, Item E CUMULATIVE POINTS.

(8) Spec Items that have not been bid on by the Contractor, will not be introduced as new work or work arising during the Contract.

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COMPANY NAME:

Item	Spec. #	Description	Total Firm Price	Cumulative Price	Points per spec	Cumulative points
1	2.4 - 2.75	Intro/ Misc./ Mechanical	\$	\$	10	10
	2.14	Pre-Work and Post-Work Inspection	\$	\$	10	20
	2.15	Fire Protection	\$	\$	10	30
	2.16	Regulatory Inspections and /or Class Surveys	\$	\$	10	40
	2.17	Test Results and Data Package	\$	\$	10	50
	2.20	Storage Space	\$	\$	10	60
	2.22	Contractor Inspections and Protection of Equipment and the Worksite	\$	\$	10	70
	2.26	Asbestos Containing Materials	\$	\$	10	80
	2.30- 2.37	Documentation / Data Book / Test Inspection	\$	\$	10	90
	2.38- 2.39	Documentation Drawings	\$	\$	10	100
	2.41- 2.43	Documentation – Manuals	\$	\$	10	110
	2.44	Identification – Nameplates	\$	\$	10	120
	2.45	Identification Wire labelling	\$	\$	10	130
	2.46	Production Schedule	\$	\$	10	140
2	4.2- 4.6	Berthing and Mooring/ Services	\$	\$	10	150
	4.7- 4.8	Office Services/ Parking	\$	\$	10	160
	5- 5.5.1	Dry-Docking and refloating	\$	\$	10	170
3	6- 6.5.4	Shell and Structure	\$	\$	10	180
	6a- 6a1.5.1	Exterior Hull Coating	\$	\$	10	190
	6b- 6b.5.1	Interior Hull Cleaning	\$	\$	10	200
	6c- 6c.5.2	Engine Removal and Reinstallation	\$	\$	10	210

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	6d- 6d.5.1	Watertight Areas	\$	\$	10	220
	6e- 6e.5.1	Engine Bay Hatch Covers	\$	\$	10	230
	6f- 6f.5.1	Skirt Replacement	\$	\$	10	240
	6g- 6g.5.1	Fan Intake Bay Stairs	\$	\$	10	250
4	7- 7.5.2	Control Cabin Windows	\$	\$	10	260
	7a- 7a.5.3	Mast Winch Installation	\$	\$	10	270
	7b- 7b.5.1	Window Wiper Replacement	\$	\$	10	280
5	8- 8.5.1	Main Cabin Insulation Replacement	\$	\$	10	290
6	9- 9.5.7	Engine Control System Modification	\$	\$	10	300
7	10- 10.5.3	Fuel System Valve Replacement and Overhauling of Fuel Pumps	\$	\$	10	310
8	11- 11.5.1	Electronic and Navigation Equipment Wiring	\$	\$	10	320
9	12- 12.5.3	Propulsion Transmission Frame Installation	\$	\$	10	330
10	13- 13.5.1	Fuel Bladder Replacement	\$	\$	10	340
	13a- 13a.5.1	Fuel Sensor Relocation	\$	\$	10	350
11	14- 14.5.3	Lift Fan Transmission Service	\$	\$	10	360
12	15- 15.5.1	Well Deck Drains	\$	\$	10	370
13	16-16.5.2	WellDeck Tie Down Points Servicing	\$	\$	10	380

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ANNEX I

VESSEL CUSTODY

11 Vessel Custody

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

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ANNEX I - APPENDIX 1

ACCEPTANCE CERTIFICATE

ASSUMPTION OF CUSTODY OF CANADIAN GOVERNMENT SHIPS BY CONTRACTORS

ACCEPTANCE OF _____

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

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

SIGNED AT _____ PROVINCE _____ ON,

THE _____ DAY OF _____ (Month) 2014.

AT _____ HOURS.

FOR: _____
(CONTRACTOR)

FOR: _____
Department of Canadian Coast Guard

WITNESSED BY: _____
PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

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File No. - N° du dossier
032md/ F7049-150229

Buyer ID - Id de l'acheteur
032md
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ANNEX I - APPENDIX 2

ACCEPTANCE CERTIFICATE

RESUMPTION OF CUSTODY OF CANADIAN GOVERNMENT SHIPS BY SHIPYARDS

ACCEPTANCE OF CCGS _____

1. The undersigned, on behalf of _____ and of the Department of Canadian Coast Guard, acknowledge to have handed over and to have received respectively the CCGS _____, said vessel having been received By _____ on _____ (date), for the purpose of refit in accordance with the terms and conditions of PWGSC Contract Serial Number _____.

2. It is mutually agreed by all parties that the liabilities and responsibilities of _____, as defined in Article 9 of PWGSC 1029 Supplemental General Conditions for Ship Repairs, for a vessel out of commission, shall automatically cease as at _____ hours on _____ (date).

3. That effective from _____ hours on the _____ (date) Article 8 of PWGSC 1029 for a vessel "in commission" Shall apply, and that responsibility for the care and protection of the said vessel shall revert to Canada.

SIGNED AT _____ PROVINCE _____ ON,

THE _____ DAY OF _____ (Month) 2014.

AT _____ HOURS.

FOR: _____
(CONTRACTOR)

FOR: _____
Department of Canadian Coast Guard

WITNESSED BY: _____
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ANNEX J DELIVERABLES/CERTIFICATIONS

J1 Mandatory Tender Deliverables Check List

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

The Bidder must submit a completed Annex "J1" Deliverables/ Certifications.

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

Item	Description	Completed and Attached
1	Invitation To Tender document part 1 page 1 completed and signed;	
2	1 hard copy and 1 soft copy for all 3 sections, Article 3.1	
3	Completed Annex "H" Financial Bid Presentation Sheet", clauses H1 through H6;	
4	Completed Pricing Data Sheets, per clause 3.1 Section II, Annex "H",Appendix 1;	
5	Completed Cumulative Pricing Data Sheets, per clause 3.1 Section II, Annex "H",Appendix 2;	
6	Completed Annex "J1" Deliverables/Certifications;	
7	Changes to Applicable Laws (if any), as per clause 2.4	
8	Integrity Provisions - Associated Information, section 5.1.1	
9	Federal Contractors Program for Employment Equity, Complete section 5.1.2	
10	Education and Experience Certification , as per Clause 5.1.3	
11	Status and Availability of Resources Certification, as per Clause 5.1.4	
12	Type of Contract Financial Security, as per clause 6.2.1	
13	Vessel Transfer Cost, as per clause 6.3 and Annex "H"	
14	Docking Faciltiy, as per clause 6.4	
15	Proof of good standing with Worker's Compensation Board, as per clause 6.5	
16	Proof of valid Labor Agreement or similar instrument covering the work period, as per clause 6.6	
17	Preliminary Work Schedule , per clause 6.7;	
18	Fueling and Disembarking Procedures, as per clause 6.8;	
19	Quality Management System, as per clause 6.9	
20	Health and Safety System, as per clause 6.10;	
21	Objective evidence of documented Fire Protection, Fire Fighting and	

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	Training Procedure, as per clause 6.11	
22	Insurance Requirements – letter , as per clause 6.13	
23	Proof of welding certification, as per clause 6.14	
24	Project Management as per clause 6.15 para 4	
25	List of subcontractors, as per clause 6.16	
26	Example of its Quality Control Plan, as per clause 6.17	
27	Example of an Inspection and Test Plan as per clause 6.18	
28	Details of Environmental Emergency Response Plan, Details of Formal Environmental Training as per Clause 6.19	
29	The Contractor must indicate the make and model of there Internal Communication System with their bid, as referenced in the specification at Annex A 24.3.13	

J2 Deliverables after Contract Award

Item	Description	Reference	Due By
1	Insurance requirements as per Annex "D"	Clause 7.11 and Annex "D"	10 Working Days after contract award
2	Revised Work Schedule	Clause 7.16	5 calendar days after contract award
3	Contract Financial Security	Clause 7.13	5 Working Days after contract award
4	The Contractor's Quality Control Plan	Clause 7.21	5 calendar days after contract award
5	The list of Government specialized loaned equipment that the Contractor intends to request.	Clause 7.28	3 calendar days after contract award

J3 Deliverables Prior to Contract Award (If Requested)

Item	Description	Reference	Due By
1	Financial Capability	Clause 6.1	5 Working Days prior to contract award if requested