



## RETURN BIDS TO:

## RETOURNER LES SOUMISSIONS À:

Bid Receiving - PWGSC / Réception des  
soumissions - TPSGC

11 Laurier St. / 11, rue Laurier

Place du Portage, Phase III

Core 0B2 / Noyau 0B2

Gatineau, Québec K1A 0S5

Bid Fax: (819) 997-9776

## INVITATION TO TENDER

## APPEL D'OFFRES

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

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

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

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

### Comments - Commentaires

### Vendor/Firm Name and Address

Raison sociale et adresse du  
fournisseur/de l'entrepreneur

### Issuing Office - Bureau de distribution

Ship Refits and Conversions / Radoubss et  
modifications de navires and / et

11 Laurier St. / 11, rue Laurier

6C2, Place du Portage

Gatineau, Québec K1A 0S5

<b>Title - Sujet</b> CCGS Samuel Risley	
<b>Solicitation No. - N° de l'invitation</b> F2599-195017/A	<b>Date</b> 2019-05-31
<b>Client Reference No. - N° de référence du client</b> F2599-195017	<b>GETS Ref. No. - N° de réf. de SEAG</b> PW-\$MD-040-27341
<b>File No. - N° de dossier</b> 040md.F2599-195017	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2019-07-03</b>	
<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Daylight Saving Time EDT	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Abbas, Haitham	<b>Buyer Id - Id de l'acheteur</b> 040md
<b>Telephone No. - N° de téléphone</b> (873) 469-4678 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> CCGS Samuel Risley Canadian Coast Guard 28 Waubeek Street Parry Sound, ON P2A 1B9	

Instructions: See Herein

Instructions: Voir aux présentes

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

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## **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 bid

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

The Annexes include the Technical Specification, the Basis of Payment, the Insurance Requirements and other Annexes.

### **1.2 Summary**

**1.2.1** The Requirement is described in the article 7.1 of this solicitation and detailed in Annex A – Statement of Work.

**1.2.2** 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.

**1.2.3** The requirement is exempt from the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), Annex 4 and the North American Free Trade Agreement (NAFTA), Chapter Ten Annex 1001.2b Paragraph 1(a). However, it is subject to the Canadian Free Trade Agreement (CFTA). 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).

**1.2.4** There is a mandatory site visit associated with this requirement. Consult Part 2 – Bidder Instructions.

**1.2.5** This bid solicitation allows bidders to use the epost Connect service provided by Canada Post Corporation to transmit their bid electronically. Bidders must refer to Part 2 entitled Bidder Instructions, and Part 3 entitled Bid Preparation Instructions, of the bid solicitation, for further information.

### **1.3 Debriefings**

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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.

#### **1.4 Security Requirements**

There is no security requirement applicable to the solicitation.

## **PART 2 - BIDDER INSTRUCTIONS**

### **2.1 Standard Instructions, Clauses and Conditions**

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

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 (2018-05-22) 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.

Due to the nature of the bid solicitation, bids transmitted by facsimile to PWGSC will not be accepted.

### **2.3 Enquiries - Bid Solicitation**

All enquiries must be submitted in writing to the Contracting Authority no later than (7) calendar 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**

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

### **2.5 Mandatory Site Visit – Vessel**



It is mandatory that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for the site visit to be held at CCG Base of Parry Sound, 28 Waubeek St, Parry Sound, ON P2A 1B9 on June 19, 2019. The site visit will begin at 10:00 EDT.

Bidders must communicate with the Contracting Authority no later than June 17th, 2018 16:00 EDT to confirm attendance and provide the name(s) of the person(s) who will attend. Bidders will be required to sign an attendance sheet. Bidders should confirm in their bid that they have attended the site visit. Bidders who do not attend the mandatory site visit or do not send a representative will not be given an alternative appointment and their bid will be declared non-responsive. Any clarifications or changes to the bid solicitation resulting from the site visit will be included as an amendment to the bid solicitation.

## **2.6 Optional Bidders' Conference**

A bidders' conference will be held at CCG Base of Parry Sound, 28 Waubeek St, Parry Sound, ON P2A 1B9. The conference will take place immediately after the Mandatory Site Visit Described in this document. The scope of the requirement outlined in the bid solicitation will be reviewed during the conference and questions will be answered. It is recommended that bidders who intend to submit a bid attend or send a representative.

Bidders are requested to communicate with the Contracting Authority before the conference to confirm attendance. Bidders should provide, in writing, to the Contracting Authority, the name(s) of the person(s) who will be attending and a list of issues they wish to table no later than June 17th, 2019 16:00 EDT.

Any clarifications or changes to the bid solicitation resulting from the bidders' conference will be included as an amendment to the bid solicitation..

## **2.7 Work Period**

The start date of the work has not yet been determined but will be around August 14, 2019 and the work must be completed by October 23, 2019.

## **2.8 Additional Instructions - Work Period**

1. From refit start date to the end of the work period, when the vessel will be unmanned during that period, it will be considered to be out of commission and it will be in the care and custody of the Contractor and under its control.

For details please refer to Annex I – 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.

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

2. 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 2.7 Work Period is adequate to both complete the known work and absorb a reasonable amount of unscheduled work.
3. The vessel will have to be made completely habitable for the ship's crew by October 23, 2019.

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## **2.9 Equivalent Products**

The SACC B3000T (2006-06-16) Equivalent Products, are incorporated by reference into and form part of the bid solicitation.

## PART 3 - BID - PREPARATION INSTRUCTIONS

### 3.1 Bid Preparation Instructions

- (a) If the Bidder chooses to submit its bid electronically, Canada requests that the Bidder submits its bid in accordance with section 08 of the 2003 standard instructions. Bidders must provide their bid in a single transmission. The epost Connect service has the capacity to receive multiple documents, up to 1GB per individual attachment.

The bid must be gathered per section and separated as follows:

Section I: Technical Bid  
Section II: Financial Bid  
Section III: Certifications  
Section IV: Additional Information

- (b) If the Bidder chooses to submit its bid in hard copies, Canada requests that the Bidder submits its bid in separately bound sections as follows:

- i. Section I: Technical Bid (1 hard copies and 1 soft copies on USB key)
- ii. Section II: Financial Bid (1 hard copies and 1 soft copies on USB key)
- iii. Section III: Certifications (1 hard copies and 1 soft copies on USB key)
- iv. Section IV: Additional Information (1 hard copies and 1 soft copies on USB key)

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

- (c) If the Bidder is simultaneously providing copies of its bid using multiple acceptable delivery methods, and if there is a discrepancy between the wording of any of these copies and the electronic copy provided through epost Connect service, the wording of the electronic copy provided through epost Connect service will have priority over the wording of the other copies.

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

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

- (d) 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:

- i. 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;
- ii. 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 of Annex "H". The total amount of Applicable Taxes must be shown separately.

### **Section III: Certifications**

Bidders must submit the certifications required under Part 5.

#### **3.1.1 Exchange Rate Fluctuation**

C3011T (2013-11-06), Exchange Rate Fluctuation

#### **3.2 Electronic Payment of Invoices – Bid**

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex K Electronic Payment Instruments, to identify which ones are accepted.

If Annex K Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

## **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) All specifications detailed in Annex A;
- (c) Demonstration that the minimum performance characteristics of equipment meet the Actual Ship Machinery Regulations established by Transport Canada for Application on the CCGS Samuel Risley

#### **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.

#### **Section III - Certifications**

Bidders must provide the required certifications and additional information in Part 5.

### **4.1.1 Evaluation of Price**

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

### **4.1.2 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 estimated cost for the unscheduled work must be included in the bids. The total global price will be calculated by including an estimated amount of additional person-hours (and/or material) 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 total global cost named «evaluation price» will be used for evaluating the bids. The estimated work will be based on historical experience and there is no minimum or maximum amount of unscheduled work nor is there a guarantee of such unscheduled work.

#### **4.2 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 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**

For details refer to Annex J – Deliverables / Certifications – J2 Deliverables after Contract Award.

## **PART 5 - CERTIFICATIONS**

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

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 with the Bid**

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

#### **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 (2018-05-22) 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.

**Refer to Annex "J1" for Deliverables/Certifications**

#### **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](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)) available from Employment and Social Development Canada (ESDC) - Labour's website.

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

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

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

#### **5.1.3 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**

### **5.2 Certifications Precedent to Contract Award and Additional Information**

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

#### **5.2.1 Integrity Provisions – Required Documentation**

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



## PART 6 - FINANCIAL AND OTHER REQUIREMENTS

### 6.1 Financial Capability

SACC Manual Clause [A9033T](#) (2012-07-16) Financial Capability.

### 6.2 Contract Financial Security

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

- a) In Annex "J1", the type of Contract Financial Security the Bidder intends to provide if awarded the Contract; and
- b) In Annex H "Financial Bid Presentation Sheet", 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 7.15 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 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 Samuel Risley  
Home port: Parry Sound, Ontario

Transfer costs in the case of vessels transferred using a government delivery crew include the fuel cost at the vessel's most economical speed of transit and for unmanned refits only, crew transportation costs for the delivery crew based on the location of the vessel's home port and the shipyard/ship repair facility. Crew transportation costs do not include any members of the delivery crew who remain at the shipyard/ship repair facility in order to discharge project responsibilities related to the vessel being transferred.

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

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

Company	Location	Unmanned
Chantier Davie Canada Inc.	Levis/QuebecCity, QC	\$101,953
Chantier Forillon	Gaspe, QC	\$137,882
CME Marine Works	Sambro, NS	\$180,335
Groupe Ocean Inc.	Quebec, QC	\$101,953
Heddle Marine	St. Catharines, Ont	\$65,578
Heddle Marine	Hamilton, Ont	\$58,210
Méridien Maritime	Matane, QC	\$136,809
MetalCraft Marine Inc.	Kingston, ONT	\$74,801
NewDock Dockyard	St. John's, NF	\$199,470
Oceans Industries Inc.	Saint-Bernard-Sur-Mer, QC	\$105,570
Saint John Shipbuilding Ltd.	Saint John, NB	\$204,426
Shelburne Marine.	Shelburne, NS	\$189,980
Verreault Navigation Inc.	Les Mechins, QC	\$181,583

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

Refer to Annex "J1" for Deliverables/Certifications.

#### 6.4 Docking Facility

- 6.4.1 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.
- 6.4.2 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.
- 6.4.3 Before contract award, the contractor must provide his anticipated operational plan for the drydock

where the fairing of the vessel will take place. The plan must include all vessel movements as well as the planned location of the vessel in the drydock. The plan must be kept up to date, the TA and the IA must be made aware at least 48 hours in advance when the drydock will be flooded imposing the vessel to float. The operational plan and the vessel location in the drydock must not interfere with the refloating of the vessel in accordance with the terms of the contract.

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

**Refer to Annex "J1" for Deliverables/Certifications**

**6.5 Workers' Compensation - Letter of Good Standing**

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

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

**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**

At the time of bid closing the Bidder must submit to Canada one (1) copy of a preliminary work schedule in a Gantt chart format elaborated with the software MS Project 2013 or equivalent. The schedule must highlight the target dates listed in this document and all priced work items listed in Annex H. For purposes of the schedule, the bidder will assume that the work period is as described in Article 2.7 Work Period with the start date of installation on August 14, 2019. These dates will be used for evaluation only.

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

- a. Commencement of Work as defined at Article 7.5.1;
- b. Period to be in Dry-Dock and drydock operational plan;
- c. All priced work items listed in Annex H Appendix 1;
- d. FSR Scheduling for Priced Work Items;
- e. Completion of Work as defined at Article 7.5.1;
- f. Vessel ready for crew;
- g. Dock and Sea Trials Period;
- h. Resumption of custody by Canada.

**Refer to Annexes "J1" and "J2", 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**

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**

In addition to the instructions listed in Annex "A", the Bidder must submit with its bid objective evidence that it has documented fire protection, firefighting and training procedures compliant with current regulations and their insurance requirements. The fire protection, firefighting and training procedures will, once accepted by Canada, form part of the Contract. Please refer to clause 7.29. 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.

**Refer to Annex "J1", Deliverables/Certifications.**

#### **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.

**Refer to Annex "J1", Deliverables/Certifications.**

#### **6.14 Welding Certification**

Welding must be performed by a welder certified by the Canadian Welding Bureau and in accordance with the requirements of the following Canadian Standards Association (CSA) standards:

- (a) CSA W47.1, Certification for Companies for Fusion Welding of Steel (Minimum Division Level 2); and
- (b) CSA W47.2, Certification for Companies for Fusion Welding of Aluminum (Minimum Division Level 3); and
- (c) CSA\ACNOR AWS (American Welding Society), Certification for Companies for Fusion Welding of Stainless Steel (Minimum Division Level 16).

The bidder must submit with his bid proof of its and/or subcontractors certification for CSA W47.1, Certification for Companies for Fusion Welding of Steel (Minimum Division Level 2) and CSA W47.2, Certification for Companies for Fusion Welding of Aluminum (Minimum Division Level 3). The bidder must maintain valid its certifications for the duration of the Contract.

The successful bidder will have to provide **five (5) days** before the start date of the Work, the list of welders susceptible to be assigned to the Work with a valid copy of their respective certificate. The bidder must maintain valid his list of certified welders for the duration of the Contract in accordance with Article 7.32.

**Refer to Annex "J1" and "J2" 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 of 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:

- 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 3 above have been addressed.

## **5. Reports**

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

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

**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.

**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.**

## **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 dry-docking, maintenance and alterations of the Canadian Coast Guard Vessel CCGS Samuel Risley 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;  
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 or his/her designate;

"PWGSC" or "PSPC" – means respectively the Department's former title Public Works and Government Services Canada or its new title Public Services and Procurement Canada;

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



described as a "Working Day" or "Working Days".

Capitalized terms not otherwise defined in these Articles of Agreement numbered 1 through 52 inclusive and defined in the General Conditions or Supplemental Conditions referred to 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

*SAAC Manual Clause 2030 (2018-06-21)*, General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

Clause **2030 (2018-06-21)**, 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:
  - (b) 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.
  - (c) All other painting work for a period of 365 days commencing from the date of acceptance of the Work;
  - (d) All other items of work for a period of ninety (90) days commencing from the date of acceptance of the Work, except that:
    - (i) the warranty on the work related to any system or equipment not immediately placed in continuous use or service will be for a period of ninety (90) days from the date of acceptance of the vessel;
    - (ii) for all outstanding defects, deviations, and work items listed on the Acceptance Document at Delivery, the warranty will be ninety (90) days from the subsequent date of acceptance for each item.
3. The Contractor agrees to pass to Canada, and exercise on behalf of Canada, all warranties on the materials supplied or held by the Contractor which exceed the periods indicated above. Refer to Annex "E" and its Appendix "1" for Warranty Defect Claim Procedures and

forms.

*SAAC Manual Clause 1031-2 (2012-07-16)*, Contract Cost Principles, apply and form part of the Contract. This Clause is described below:

**1031-2 01 (2008-05-12) General Principle**

The total cost of the Contract must be the sum of the applicable direct and indirect costs which are, or must be reasonably and properly incurred and/or allocated, in the performance of the Contract, less any applicable credits. These costs must be determined in accordance with the Contractor's cost accounting practices as accepted by Canada and applied consistently over time.

**1031-2 02 (2008-05-12) Definition of a Reasonable Cost**

1. A cost is reasonable if the nature and amount do not exceed what would be incurred by an ordinary prudent person in the conduct of a competitive business.
2. In determining the reasonableness of a particular cost, consideration will be given to:
  - a. whether the cost is of a type generally recognized as normal and necessary for the conduct of a Contractor's business or performance of the Contract;
  - b. the restraints and requirements by such factors as generally accepted sound business practices, arm's length bargaining, federal, provincial and local laws and regulations, and Contract conditions;
  - c. the action that prudent business persons would take in the circumstances, considering their responsibilities to the owners of the business, their employees, customers, the Government and public at large;
  - d. significant deviations from the established practices of the Contractor which may unjustifiably increase the Contract costs; and
  - e. the specifications, delivery schedule and quality requirements of the particular Contract as they affect costs.

**1031-2 03 (2008-05-12) Direct Costs**

There are three categories of direct costs:

- a. "Direct Material Costs" meaning the cost of materials which can be specifically identified and measured as having been used or to be used in the performance of the Contract and which are so identified and measured consistently by the Contractor's cost accounting practices as accepted by Canada.
  - i. These materials may include, in addition to materials purchased solely for the performance of the Contract and processed by the Contractor, or obtained from subcontractors, any other materials issued from the Contractor's general stocks.
  - ii. Materials purchased solely for the performance of the Contract or subcontracts must be charged to the Contract at the net laid-down cost to the Contractor before cash discounts for prompt payment.
  - iii. Materials issued from the Contractor's general stocks must be charged to the Contract in accordance with the method as used consistently by the Contractor in pricing material inventories.
- b. "Direct Labour Costs" meaning the costs of the portion of gross wages or salaries incurred for the Work, which can be specifically identified and measured as having been

incurred or to be incurred in the performance of the Contract and which are so identified and measured consistently by the Contractor's cost accounting practices as accepted by Canada.

c. "Other Direct Costs" meaning those applicable costs, not falling within the categories of direct material or direct labour, but which can be specifically identified and measured as having been incurred or to be incurred in the performance of the Contract and which are so identified and measured consistently by the Contractor's cost practices as accepted by Canada.

#### **1031-2 04 (2012-07-16) Indirect Costs**

1. "Indirect Costs (overhead)" meaning those costs which, though necessarily having been incurred during the performance of the Contract for the conduct of the Contractor's business in general, cannot be identified and measured as directly applicable to the performance of the Contract.

2. These Indirect Costs may include, but are not necessarily restricted to, such items as:

- a. indirect materials and supplies (\*);
- b. indirect labour;
- c. fringe benefits (the Contractor's contribution only);
- d. public services expenses: expenses of a general nature such as power, heat, light, operation and maintenance of general assets and facilities;
- e. fixed/period charges: recurring charges such as property taxes, rentals and reasonable depreciation costs;
- f. general and administrative expenses: including remuneration of executive and corporate officers, office wages and salaries and expenses such as stationery, office supplies, postage and other necessary administration and management expenses;
- g. selling and marketing expenses associated with the goods, services or both being acquired under the Contract;
- h. general research or development expenses as considered applicable by Canada.

(\*) For supplies of similar low-value, high-usage items the costs of which meet the above definition of Direct Material Costs but for which it is economically expensive to account for these costs in the manner prescribed for direct costs, then they may be considered to be indirect costs for the purposes of the Contract.

#### **1031-2 05 (2008-05-12) Allocation of Indirect Costs**

Indirect Costs must be accumulated in appropriate indirect cost pools, reflecting a Contractor's organizational or operational lines and these pools subsequently allocated to contracts in accordance with the following two principles:

- a. the costs included in a particular indirect cost pool should have a similarity of relationship with each Contract to which that indirect cost pool is subsequently distributed; further, the costs included in an indirect cost pool should be similar enough in their relationship to each other that the allocation of the total costs in the pool provides a result which would be similar to that achieved if each cost within that pool were separately distributed;
- b. the allocation basis for each indirect cost pool should reflect, as far as possible, the causal relationship of the pooled costs to the contracts to which these costs are distributed.

#### **1031-2 6 (2008-05-12) Credits**

The applicable portion of any income, rebate, allowance, or any other credit relating to any

applicable direct or indirect cost, received by or accruing to the Contractor, must be credited to the Contract.

### **1031-2 07 (2012-07-16) Non-applicable Costs**

Despite that the following costs may have been or may be reasonably and properly incurred by the Contractor in the performance of the Contract, they are considered non-applicable costs to the Contract:

- a. allowance for interest on invested capital, bonds, debentures, bank or other loans together with related bond discounts and finance charges;
- b. legal, accounting and consulting fees in connection with financial reorganization, security issues, capital stock issues, obtaining of patents and licenses and prosecution of claims against Canada;
- c. losses on investments, bad debts and collection charges;
- d. losses on other contracts;
- e. federal and provincial income taxes, excess profit taxes or surtaxes and/or special expenses in connection with those taxes;
- f. provisions for contingencies;
- g. premiums for life insurance on the lives of officers and/or directors where proceeds accrue to the Contractor;
- h. amortization of unrealized appreciation of assets;
- i. depreciation of assets paid for by Canada;
- j. fines and penalties;
- k. expenses and depreciation of excess facilities;
- l. unreasonable compensation for officers and employees;
- m. specific product development or improvement expenses not associated with the product being acquired under the Contract;
- n. advertising, except reasonable advertising of an industrial or institutional character placed in trade, technical or professional journals for the dissemination of information for the industry or institution;
- o. entertainment expenses;
- p. donations except those to charities registered under the Income Tax Act;
- q. dues and other memberships other than regular trade and professional associations;
- r. fees, extraordinary or abnormal for professional advice in regard to technical, administrative or accounting matters, unless approval from the Contracting Authority is obtained.
- s. compensation in the form of dividend payments or calculated based on dividend payments;
- t. compensation calculated, or valued, based on changes in the price of corporate securities, such as stock options, stock appreciation rights, phantom stock plans or junior stock conversions; or, any compensation in the form of a payment made to an employee in lieu of an employee receiving or exercising a right, option, or benefit.

### **7.3.2 Supplemental General Conditions**

*SAAC Manual Clause 1029* (2010-08-16) Ship Repairs;

*SAAC Manual Clause 4006* (2010-08-16) Contractor to Own Intellectual Property Rights in Foreground Information.

### **7.4 Security Requirements**

There is no security requirement applicable to the Contract

### **7.5 Term of Contract**

### **7.5.1 Work Period - Marine**

1. Work must commence and be completed as follows:

Commence: August 14, 2019  
Complete: October 23, 2019

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 10 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 10 calendar days advance notice of a delay.  
The Completion Date shall be reasonably adjusted to reflect the impact of the delay on the arrival of the Vessel and Canada shall pay only the Daily Services Fee referred to in the Basis of Payment for the period of the delay

### **7.5.2 Additional Instructions to Work Period**

From refit start date of June 17, 2019 to July 7, 2019 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.

### **7.5.3 Time is of the Essence**

Refer to SACC Manual Clause 2030 (2018-05-22), sub-section 10, Time is of the Essence.

## **7.6 Authorities**

### **7.6.1 Contracting Authority**

The Contracting Authority for the Contract is:

Name: Haitham Abbas  
Title: Supply Specialist  
Public Works and Government Services  
Canada Acquisitions Branch  
Directorate: Refit, Logistics and Small Vessel  
Construction Address: 11 Laurier Street, Gatineau  
(QC) K1A 0S5 Telephone: 819-955-1436  
E-mail address: [Haitham.Abbas@pwgsc-tpsgc.gc.ca](mailto:Haitham.Abbas@pwgsc-tpsgc.gc.ca)

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

requests or instructions from anybody other than the Contracting Authority.

#### **7.6.2 Technical Authority**

The Technical Authority for the Contract is:

Name: Will be disclosed at Contract Award

Telephone:

Cell:

E-mail:

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.

#### **7.6.3 Inspection Authority**

The role of the Inspection Authority for the Contract will be assumed by the Canadian Coast Guard.

Name: Will be disclosed at Contract Award

Telephone:

Cell:

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.

#### **7.6.4 Contractor Representative:**

Name:

Telephone:

E-mail:

### **7.7 Payment**

#### **7.7.1 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 must be in accordance with Annex "B".

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.

#### **7.7.2 Method of Payment - Progress Payments - Subject to holdback**

1. Canada will make payments in accordance with the Schedule of payments detailed in the Contract and the payment provisions of the Contract, 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](#), 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 payments paid by Canada does not exceed 90 percent of the total amount to be paid under the Contract;
  - d. all the certificates appearing on form [PWGSC-TPSGC 1111](#) have been signed by the respective authorized representatives;
  - e. all work associated with the milestone and as applicable any deliverable required have been completed and accepted by Canada.
2. The balance of the amount payable will be paid in accordance with the payment provisions of the Contract upon completion and delivery of all Work required under the Contract if the Work has been accepted by Canada and a final claim for the payment is submitted.
3. Progress payments are interim payments only. Canada may conduct a government audit and interim time and cost verifications and reserves the rights to make adjustments to the Contract from time to time during the performance of the Work. Any overpayment resulting from progress payments or otherwise must be refunded promptly to Canada

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

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.

#### **7.7.4 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.

#### **7.7.5 Time Verification**

*SAAC Manual* Clause C0711C (2008-05-12) Time Verification

#### **7.7.6 Electronic Payment of Invoices – Contract**

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):

- a. Visa Acquisition Card;
- b. MasterCard Acquisition Card;
- c. Direct Deposit (Domestic and International);
- d. Electronic Data Interchange (EDI);
- e. Wire Transfer (International Only);

#### **7.8 Invoicing Instructions**

The Contractor must submit invoices in accordance with the information required in Section 13 of 2030 (2018-06-21), General Conditions, Higher Complexity, Goods and Article 7.7 - Payment and Article 7.8 - Invoicing Instructions.

##### **7.8.1 Invoices**

1. Invoices are to be made out to:

Canadian Coast Guard Engineering  
520 Exmouth Street  
Sarnia, Ontario, N7T 8B1  
Attn: Helen Evans

And;

An invoice copy to be forwarded for verification to:

Public Works and Government Services Canada  
Marine Systems Directorate  
Ship Refit Division  
6C2 Place du Portage, Phase III  
11 Laurier Street  
Gatineau, Quebec K1A 0S5  
Attention: Haitham Abbas  
[Haitham.Abbas@tpsgc-pwgsc.gc.ca](mailto:Haitham.Abbas@tpsgc-pwgsc.gc.ca)

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

##### **7.8.2 Invoicing Instructions - Progress Claim**

1. The Contractor must submit a claim for payment using form PWGSC-TPSGC 1111 <http://publiservice-app.pwgsc.gc.ca/forms/pdf/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 2030 (2018-06-21), General Conditions, section 13 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 Technical Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

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

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

### **7.8.3 Warranty Holdback**

A warranty holdback of 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.

## **7.9 Certifications**

### **7.9.1 Compliance**

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

### **7.9.2 Status of equipment provided**

The Contractor must provide the Contracting Authority with evidence that all components of are new and manufactured recently (less than 3 years).

Canada will not accept equipment refurbished, reworked or rebuilt.

## **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 wordings of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any

document that subsequently appears on the list.

- (a) The Articles of Agreement;
- (b) The Supplemental General Conditions 1029 (2018-12-06), Ship Repairs;
- (c) The General Conditions 4006 (2010-08-16) Contractor to Own Intellectual Property Rights in Foreground Information;
- (d) The General Conditions 2030 (2018-06-21), General Conditions - Higher Complexity – Goods;
- (e) The General Conditions 1031-2 (2012-07-16), Contract Cost Principles;
- (f) Bidder's Questions and Answers
- (g) Annex "A", Statement of Work;
- (h) Annex "B", Basis of Payment;
- (i) Annex "D", Insurance Requirements;
- (j) Annex "E", Warranty;
- (k) Annex "F", Procedure for Unscheduled Work;
- (l) Annex "G", Quality Control/Inspection;
- (m) Annex "H", Financial Bid Presentation Sheet;
- (n) Annex "J", Deliverables/Certifications;
- (o) 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.

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

## **7.13 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 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
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.

#### **7.14 Environmental Impairment Liability Insurance**

Refer to Annex D, section D.3

#### **7.15 Financial Security**

##### **7.15.1 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.

### 7.15.2 Contract Financial Security

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

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

OR

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

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

2. If, for any reason, Canada does not receive the financial security in the amount set out above within the specified period, the Contractor will be in default. Canada may, at its discretion, terminate the Contract for default pursuant to the Contract default provision, accept another bid, reject all bids or issue a new bid solicitation.
3. Security deposits in the form of government guaranteed bonds with coupons attached will be accepted only if all coupons that are unmatured, at the time the security deposit is provided, are attached to the bonds. The Contractor must provide written instructions concerning the action to be taken with respect to coupons that will mature while the bonds are pledged as security, when such coupons are in excess of the security deposit requirement.
4. If the security deposit is in the form of a bill of exchange, Canada will deposit the bill of exchange in an open account in the Consolidated Revenue Fund. Bills of exchange that are deposited to the credit of the Consolidated Revenue Fund will bear simple interest, calculated on the basis of the rates which are in effect during the period the deposit is held.

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

5. Canada may convert the security deposit to the use of Canada if any circumstance exists which would entitle Canada to terminate the Contract for default, but any such conversion will not constitute termination of the Contract.
6. When Canada so converts the security deposit:
  - (a) the proceeds will be used by Canada to complete the Work according to the conditions of the Contract, to the nearest extent that it is feasible to do so and any balance left will be returned to the Contractor on completion of the warranty period; and
  - (b) if Canada enters into a contract to have the Work completed, the Contractor will:
    - (i) be considered to have irrevocably abandoned the Work; and
    - (ii) remain liable for the excess cost of completing the Work if the amount of the security deposit is not sufficient for such purpose. "Excess cost" means any amount over and

above the amount of the Contract Price remaining unpaid together with the amount of the security deposit.

7. If Canada does not convert the security deposit to the use of Canada before completion of the contract period, Canada will return the security deposit to the Contractor within a reasonable time after such date.
8. If Canada converts the security deposit for reasons other than bankruptcy, the financial security must be reestablished to the level of the amount stated above so that this amount is continued and available until completion of the contract period.

#### **7.15.3 Security Deposit Definition - Contract**

**SACC Manual Clause E0008C (2018-06-21)**

#### **7.16 Foreign Nationals (Canadian Contractor)**

SAAC Manual Clause A2000C (2006-06-16) Security Foreign Nationals (Canadian Contractor).

#### **7.17 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.

#### **7.18 Work Schedule and Reports**

No later than **ten (10) calendar days** after Contract award, the preliminary work schedule provided with the bid must be revised, detailed and resubmitted in preparation to the Contract award meeting.

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

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

#### **7.19 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.

#### **7.20 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.

#### **7.21 ISO 9001:2008 - Quality Management Systems**

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

ISO 9001:2008 - 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.

#### **7.22 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.

Project management refers to system integration and technical control as well as business management of the work on the CCGS.

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

**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

#### **7.23 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 Authority 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 QCP must include a list of all deliverables stated under Annex A. It must be kept up to date and signed off by the IA when items are delivered.

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.**

#### **7.24 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.**

#### **7.25 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.**

#### **7.26 Environmental Protection**

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

The Contractor must have detailed procedures and processes for identifying, removing, tracking, storing, transporting and disposing of all potential pollutants and hazardous material encountered, to ensure compliance as required above. The Contractor must maintain in force their Environmental Protection procedures through the course of the Contract.

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

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

#### **7.27 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.

#### **7.28 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 Samuel Risley must be done in accordance with the Contractor's submitted and accepted procedures.

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

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

#### **7.30 Loan of Equipment - Marine**

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

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

A list of Government equipment that the Contractor intends to request must be submitted to the Contracting Authority within **five (5) days** of Contract Award to permit timely supply or for alternate arrangements to be made. The request must state the time frame for which the equipment is required.

#### **7.31 Welding Certification**

1. The Contractor must ensure that welding is performed by a welder certified by the Canadian Welding Bureau (CWB) for the following Canadian Standards Association (CSA) standard(s):
  - (a) CSA W47.1, Certification for Companies for Fusion Welding of Steel (Minimum Division Level 2);
  - (b) CSA W47.2, Certification for Companies for Fusion Welding of Aluminum (Minimum Division 3).
  - (c) CSA\ACNOR AWS (American Welding Society), Certification for Companies for Fusion Welding of Stainless Steel (Minimum Division Level 16);
2. In addition, welding must be done in accordance with the requirements of the applicable drawings and specifications.



3. Before the commencement of any fabrication work, and upon request from the Technical Authority, the Contractor must provide approved welding procedures and/or a list of welding personnel they intend to use in the performance of the Work. The list must identify the CWB welding procedure qualifications attained by each of the personnel listed and must be accompanied by a copy of each person's current CWB certification to CSA welding standards.

#### **7.32 Procedures for Design Change or Additional Work**

SAAC Manual Clause B5007C (2010-01-11) Procedures for Design Change or Additional Work

**Refer to Annex "F" for the detailed procedure.**

#### **7.33 Vessel Manned Refits**

At the beginning and at the end of the Work Period, the vessel will be manned and will be considered to be in commission. The vessel during that period will remain in the care and custody of Canada and under its control, refer to Article 7.46 for details.

#### **7.34 Vessel Unmanned Refits**

1. From refit start date to the end of the work period, with the exception as noted above at 7.34, the vessel will be unmanned during that period it will be considered to be out of commission and it will be in the care and custody of the Contractor and under its control, refer to Article 7.46 for details.
2. The fire equipment must be easily accessible and the Contractor must ensure that it is available in an emergency. The Contractor must take appropriate precautions when combustion or welding is carried out in compartments or other enclosed areas of the vessel.

#### **7.35 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.

#### **7.36 Progress Meetings**

Progress meetings, chaired by the Contracting Authority, will take place at the Contractor's facility as and when required, generally every four weeks in pace with the CCG personnel work schedule to the project. Interim meetings may also be scheduled including daily production meetings where other contractors may attend for planning purposes. Contractor attendees at these meetings will, as a minimum, be its Contract (Project) Manager, Production Manager (Superintendent) and Quality Assurance Manager. Progress meetings will generally incorporate Technical meetings to be chaired by the Technical Authority.

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

- (a) Ensure that Contractor data, personnel and facilities are available for each formal meeting

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

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

The Contractor shall record the minutes of all meetings, and include as a minimum discussion items, records of decisions, all action items, risk items, and a record of conclusions reached at the Progress Review and Technical Meetings.

The Contractor will distribute a draft of all minutes to the Contracting Authority, Inspection Authority and Technical Authority for review and comment from Canada, prior to issuing the final version.

Once final comments are incorporated to the satisfaction of Contracting Authority, the minutes shall be signed as accepted by the Contractor, Contracting Authority, and Technical Authority

#### **7.36.1 Weekly meetings**

Weekly update meetings, chaired by the Contracting Authority, will take place by teleconference, generally once a week. Call-in co-ordinates and timings to be provided by Contract Authority at the Pre-Refit meeting. Contractor attendees at these meetings will, as a minimum, be its Contract (Project) Manager, and Project Planner. The following agenda Items will be for discussion and resolution:

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

#### **7.37 Outstanding Work and Acceptance**

1. The Inspection Authority and the technical 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.
2. 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.
3. The Contractor must complete the above form in three (3) copies, which will be distributed by the Inspection Authority as follows:
  - (a) original to the Contracting Authority;
  - (b) one copy to the Technical Authority;
  - (c) one copy to the Contractor.

#### **7.38 Scrap and Waste Material**

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

#### **7.39 Stability**

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

#### **7.40 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.

#### **7.41 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.

#### **7.42 Workers Compensation**

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

#### **7.43 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 Director of the Refit, Logistics and Small Vessel Construction Directorate of the Marine Services and Small Vessel Sector 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.

#### **7.44 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.

**7.45 Care, Custody and Control**

Refer to Annex "I" and Supplemental General Conditions 1029 (2018-12-06) Ship Repairs Article 09 Where Vessel Out of Commission.

Refer to Annex "I" and Supplemental General Conditions 1029 (2018-12-06) Ship Repairs Article 08 Where Vessel In Commission.

**7.46 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.

**7.47 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.

**7.48 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". This clause applies also to subcontractors chosen by the contractor.

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

All payments are subject to government audit.

**7.49 Equivalency of Equipment**

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

- (iii) pay to Canada the amount that Canada must pay to the original supplier (or an authorized reseller of that supplier) to perform maintenance work on the equipment that otherwise would have been covered by the warranty.
- (c) The Contractor agrees that, during the Contract Period, if Canada determines that any of the equipment is not equivalent in form, fit, function and quality to the existing equipment owned by Canada or is not fully compatible, interchangeable and interoperable with the existing equipment owned by Canada, the Contractor must immediately and entirely at its own expense take all steps necessary to ensure that the equipment satisfies these requirements (for example, by implementing any additional software or firmware), failing which Canada will have the immediate right to terminate the Contract for default. The Contractor agrees that, if Canada terminates the Contract for this reason, the Contractor must pay to Canada the costs of reprocurring 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.

#### **7.50 Exchange Rate Fluctuation Adjustment – Not Used**

#### **7.51 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.

Contractor must refer to Annex A for listed GSM if any.

#### **7.52 Government Furnished Equipment**

All Government Property must be used by the Contractor solely for the purpose of the Contract and remains the property of Canada. The Contractor must maintain adequate Accounting records of all Government Property and, whenever feasible, mark it as being the property of Canada.

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The Contractor must take reasonable and proper care of all Government Property while it is in its possession or subject to its control. The Contractor is responsible for any loss or damage resulting from its failure to do so other than loss or damage caused by ordinary wear and tear. All Government Property, unless it is installed or incorporated in the Work, must be returned to Canada on demand. All scrap and all waste materials, articles or things that are Government Property must, unless provided otherwise in the Contract, remain the property of Canada and must be disposed of only as directed by Canada.

At the time of completion of the Contract, and if requested by the Contracting Authority, the Contractor must provide to Canada an inventory of all Government Property relating to the Contract.

The following items will be supplied as Government Furnished Equipment:

Contractor must refer to Annex A for listed Government Furnished Equipment if any.

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**ANNEX A**  
**Statement of Work**  
**(Attached)**

**ANNEX B**  
**BASIS OF PAYMENT**  
**PRICE**

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

**B1 Contract Firm Price**

<b>A)</b>	<b>Known Work</b> For work as stated in Article 1.1, Specified in Annex "A" and detailed in the attached Pricing Data Sheets Appendix 1 of Annex "H", for a FIRM PRICE of:	\$ _____
<b>B)</b>	Applicable taxes of line A) only:	\$ _____
<b>C)</b>	Cost of Financial Security	\$ _____
<b>D)</b>	Total firm Price including Applicable Taxes [A+B+C]	\$ _____

**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.

**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: \$ \_\_\_\_\_

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

### B5 Vessel, Refit, Repair or Docking Cost

The following costs must be included in the price:

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

B5.2: Docking and Undocking include:

- a. all costs resulting from dry docking, wharfage, security, shoring, shifting and/or moving of the vessel within the successful Bidder's facility;
- b. the cost of services to tie up the vessel alongside and to cast off.

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

B5.3: Field Service Representatives/Supervisory Services: include all costs for field service Representatives / supervisory services including manufacturers' representatives, engineers, 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.

B5.4: Removals: include all costs for removals necessary to carry out the Work and will be the responsibility of the successful Bidder whether or not they are identified in the specifications, except those removals not apparent when viewing the vessel or examining the drawings. The successful Bidder will also be responsible for safe storage of removed items and reinstalling them on completion of the Work. The successful Bidder will be responsible for renewal of components damaged during removal.

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

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

## **B6 Pricing Data Sheets**

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

**ANNEX C  
to PART 5 - BID SOLICITATION**

**FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY - CERTIFICATION**

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

For further information on the Federal Contractors Program for Employment Equity visit Employment and Social Development Canada (ESDC)-Labour's website.  
([http://www.esdc.gc.ca/en/jobs/workplace/human\\_rights/employment\\_equity/federal\\_contractor\\_program.page](http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page))

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

Complete both A and B.

**A. Check only one of the following:**

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

**OR**

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

**B. Check only one of the following:**

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

**OR**

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

## ANNEX D INSURANCE REQUIREMENTS

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

**For the province of Quebec, send to:**

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

**For other provinces and territories, send to:**

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

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

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

## **ANNEX E**

### **WARRANTY**

#### **Warranty Procedures**

##### **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 Contracting Authority. If the Contracting 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, the Contracting Authority 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 Technical Authority who confirms corrective action has been completed, and who then distributes the form to the Contracting Authority.

- b. In the event that the Contractor disputes the claim as a warranty defect, or agrees to share, the Contractor is to complete Part 2 and 3 of the Warranty Claim Form with the appropriate information and forward it to the Contracting Authority who will distribute copies as necessary.



c. When a warranty defect claim is disputed by the Contractor, the Technical Authority may arrange to correct the defect by in-house resources or by contracting the work out. All associated costs must be tracked and recorded as a possible charge against the Contractor by the Contracting Authority action. Material costs and labor hours expended in correcting the defect are to be recorded and entered in Section 5 of the warranty defect claim form (see below) by the Technical Authority who will forward the warranty defect claim to the 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 the Contracting Authority 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 Contracting Authority will negotiate the best possible sharing arrangement.

b. In the event of a disagreement as in paragraph 5c of the warranty claim form below, the Contracting Authority 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 labor hours and material, will be discussed between the Contracting, Inspection and Technical Authorities to determine the best course of action.

#### **5. Alongside Period For Warranty Repairs and Checks**

a. If at all possible, an alongside period for the vessel is to be arranged just before the expiration of the 90 day warranty period. This alongside period is to provide time for warranty repair and check by the Contractor.

b. In respect to the underwater paint, should it become defective during the associated warranty period the Contractor is only liable to repair to a value determined as follows:  
"Original cost to Canada for painting and preservation of the underwater section of the hull, divided by 365 days and multiplied by the number of days remaining in the 365 days warranty period. The resultant would represent the 'Dollar Credit' due to Canada from the Contractor."

c. The Underwater paint system, before expiration of the warranty, should be checked by divers. The Technical Authority is to arrange the inspection and ensure that a representative of the Contractor will attend. The Technical Authority will inform the Contracting Authority of any adverse results.

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### Annex E – Appendix 1

**Public Works and Government  
Services Canada**

**Travaux publics et Services  
gouvernementaux Canada**

#### **Warranty Claim**

#### **Réclamation De Garantie**

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

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

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

#### **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**

Date

Signature – Signature

## **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.
- 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.
- g. 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.
- h. 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.
- i. 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.
- j. 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.
- k. In the event the negotiation involves a Credit, the appropriate PWGSC form will be noted as "credit" accordingly.
- l. In the event that the Technical Authority requires Unscheduled Work of an urgent nature or an impasse has occurred in negotiations, the commencement of the Unscheduled Work should not be unduly delayed and should be processed as follows, in either case. The Contractor will complete the appropriate PWGSC 1379 form indicating the offered cost and pass it to the Contracting Authority. If the Technical Authority wishes to proceed, the Technical Authority and the Contracting Authority will sign the completed PWGSC form with the notation, "CEILING PRICE SUBJECT TO DOWNWARD ADJUSTMENT", and allocate a Serial Number having the suffix "A". The work will proceed with the understanding that following an audit of the Contractor's actual costs for completing the described work, the cost will be finalized at the ceiling price or lower, if justified by the audit. A new PWGSC form will then be completed with the finalized costs, signed and issued with the same Serial Number without the suffix "A", and bearing a notation that this form is replacing and canceling the form having the same Serial Number with the suffix "A".

NOTE: 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.

Solicitation No. - N° de l'invitation  
F2599-195017/A  
Client Ref. No. - N° de réf. du client  
F2599-195017

File No. - N° du dossier  
040md. F2599-195017  
Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur  
040md  
CCC No./N° CCC - FMS No./N° VME

#### **4. Amendment to Contract or Formal Agreement**

The Contract will be amended from time to time in accordance with the Contract terms to incorporate the costs authorized on the appropriate PWGSC forms.

## ANNEX 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

#### 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.

#### **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. Canada representatives may assist in identification where appropriate.



4. Corrective action to remove cause of unsatisfactory inspections must be submitted to the Inspection Authority in writing by the Contractor, for approval before affecting such repairs and rescheduling of the unsatisfactory inspection/test/trial. Such notices must be included in the final records passed to the Inspection Authority.
5. The Contractor must undertake rectification of defects and deficiencies in the Contractor's installation or repair as soon as practicable. The Contractor is responsible to schedule such repairs at its own risk.
6. The Contractor must reschedule unsatisfactory inspections after any required repairs have been completed.
7. Quality Control, Inspection and Test records that substantiate conformance to the specified requirements, including records of corrective actions, must be retained by the Contractor for three (3) years from the date of completion or termination of the Contract and must be made available to the Inspection Authority upon request.

## **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 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.
- a. 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.
- b. The Contractor must submit its Inspection and Test Plan as detailed in G2.
- c. 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.
- 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.
  - i. adverse weather;
  - ii. visibility;
  - iii. equipment failure or degradation;
  - iv. lack of qualified personnel; and
  - v. inadequate or non-compliance with safety standards.

## ANNEX H

### Financial Bid Presentation Sheet

#### H1 Price Evaluation

<b>A)</b>	<b>Known Work</b> For work as stated in Clause 1.1, specified in Annex "A" and detailed in the attached Pricing Data Sheets Appendix 1 of Annex "H", for a FIRM PRICE of:	\$ _____
<b>B)</b>	<b>Unscheduled Work – Contractor labour cost</b>  Estimated labour hours at a firm charge out labour rate including overhead and profit for evaluation purposes only:  1000 person hours x \$ _____ per hour for a PRICE of: See Annex H, article H2.1 and H2.2 below.  Overtime premium for time and one half: Estimated hours for evaluation purposes only: 100 person hours x \$ _____ per hour for a PRICE of: See Annex H, article H3 below.  Overtime premium for double time: Estimated hours for evaluation purposes only: 100 person hours x \$ _____ per hour for a PRICE of: See Annex H, article H3 below.	\$ _____  \$ _____  \$ _____
<b>C)</b>	Daily Service Fees for evaluation purpose only as per Clause H4 i) Eight (8) working days X \$ _____ firm daily service fee in drydock = ii) Four (4) non-working days X \$ _____ firm daily service fee in drydock = iii) Eight (8) working days X \$ _____ firm daily service fee at berthage = iv) Four (4) non-working days X \$ _____ firm daily service fee at berthage =	\$ _____ \$ _____ \$ _____ \$ _____
<b>D)</b>	Vessel Transfer Cost as Per Clause H6 Proposed shipyard/ship repair facility: _____	\$ _____
<b>E)</b>	Cost of Financial Security as per 6.2	\$ _____
<b>F)</b>	<b>EVALUATION PRICE</b> = A + B + C + D + E ( <i>Applicable Taxes Excluded</i> ):	\$ _____

#### 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 Charge-out Labour Rate. The Contractor will not be entitled to a separate labour component for the purchase and handling of materials or subcontract administration.

### **Pro-rated Prices Unscheduled Work**

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

### **H3 Overtime**

The Contractor must not perform any overtime under the Contract unless authorized in advance 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 in Drydock: \$\_\_\_\_\_
- (b) For a non-Working Day in Drydock: \$\_\_\_\_\_

(c) For a Working Day at the berthage: \$ \_\_\_\_\_

(d) For a non-Working Day at the berthage: \$ \_\_\_\_\_

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**

The following costs must be included in the price:

1. Ship Services: include all costs for ship services such as water, steam, electricity to perform the Work, 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 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 3 calendar days before the bid closing date, the location of the shipyard/ship repair and the applicable vessel transfer cost.

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

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

Vessel: CCGS Samuel Risley  
Home port: Parry Sound, Ontario

Transfer costs in the case of vessels transferred using a government delivery crew include the fuel cost at the vessel's most economical speed of transit and for unmanned refits only, crew transportation costs for the delivery crew based on the location of the vessel's home port and the shipyard/ship repair facility. Crew transportation costs do not include any members of the delivery crew who remain at the shipyard/ship repair facility in order to discharge project responsibilities related to the vessel being transferred.

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

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

Company	Location	Unmanned
Chantier Davie Canada Inc.	Levis/QuebecCity, QC	\$101,953
Chantier Forillon	Gaspe, QC	\$137,882
CME Marine Works	Sambro, NS	\$180,335
Groupe Ocean Inc.	Quebec, QC	\$101,953
Heddle Marine	St. Catharines, Ont	\$65,578
Heddle Marine	Hamilton, Ont	\$58,210
Méridien Maritime	Matane, QC	\$136,809
MetalCraft Marine Inc.	Kingston, ONT	\$74,801
NewDock Dockyard	St. John's, NF	\$199,470
Oceans Industries Inc.	Saint-Bernard-Sur-Mer, QC	\$105,570
Saint John Shipbuilding Ltd.	Saint John, NB	\$204,426
Shelburne Marine.	Shelburne, NS	\$189,980
Verreault Navigation Inc.	Les Mechins, QC	\$181,583

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F2599-195017

File No. - N° du dossier  
040md. F2599-195017  
Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur  
040md  
CCC No./N° CCC - FMS No./N° VME

**ANNEX H - APPENDIX 1 PRICING DATA SHEETS**  
**(to form part of Annex B of the Resulting Contract)**  
**(Attached)**

## **ANNEX I – VESSEL CUSTODY**

### **I1 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 CANADIAN GOVERNMENT SHIPS BY CONTRACTORS (attached as Annex I - Appendix 1) 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 vessel condition of the vessel.
4. A vessel condition report shall be appended to the above noted Certificate and shall be accompanied by colour photographs and/or video 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 CANADIAN GOVERNMENT SHIPS BY THE CLIENT DEPARTMENT (attached as Annex I - Appendix 2) shall be completed and a signed copy passed to Canada for distribution.



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 receive respectively CCGS Samuel Risley for the purpose of refit, all in accordance with the terms and conditions of PWGSC Contract Number F2599-195001 and such documents which form part of 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 \_\_\_\_\_ June, 2019, AT

\_\_\_\_\_ HOURS.

FOR: \_\_\_\_\_  
(Contractor)

FOR: \_\_\_\_\_  
Department of Canadian Coast Guard

WITNESSED BY: \_\_\_\_\_  
Public Works and Government Services Canada

ANNEX I – Appendix 2 - ACCEPTANCE CERTIFICATE

ACCEPTANCE CERTIFICATE

RESUMPTION OF CUSTODY OF CANADIAN GOVERNMENT SHIPS BY THE CLIENT

DEPARTMENT

ACCEPTANCE OF \_\_\_\_\_.

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 Samuel Risley, said vessel having been received by \_\_\_\_ on \_\_\_\_\_ (date), for the purpose of refit in accordance with the terms and conditions of PWGSC Contract Number F2599-195001.
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 of the care and protection of said vessel shall revert to Canada.

SIGNED AT \_\_\_\_\_ PROVINCE \_\_\_\_\_ ON THE \_\_\_\_\_ DAY  
OF \_\_\_\_\_ (Month), 2019, AT  
\_\_\_\_\_ HOURS.

FOR: \_\_\_\_\_ (Contractor)

FOR: \_\_\_\_\_ (Department of Canadian Coast Guard)

WITNESSED BY: \_\_\_\_\_ (Public Works and Government  
Services Canada)

## 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 (USB Key) for all 3 sections, Article 3.1(b);	
3	Completed Annex "H" Financial Bid Presentation Sheet", Annex H, H1 through H6;	
4	Completed Pricing Data Sheets, per Article 3.1 Section II, Annex "H", Appendix 1 as Excel file;	
5	Completed Annex "J1" Deliverables/Certifications;	
6	Changes to Applicable Laws (if any), as per Article 2.4;	
7	Integrity Provisions - Associated Information, Article 5.1.1;	
8	Federal Contractors Program for Employment Equity, Complete section, Article 5.1.2;	
9	Status and Availability of Resources Certification,, Article 5.1.3;	
10	Vessel Transfer Cost, as per clause 6.3 and Annex "H"	
11	Docking Facility, as per clause 6.4	
12	Proof of good standing with Worker's Compensation Board, Article 6.5;	
13	Proof of valid Labor Agreement or similar instrument covering the work period, Article 6.6;	
14	Preliminary Work Schedule , Article 6.7;	
15	Fueling and Disembarking Procedures, as per clause 6.8;	
16	Quality Management System, Article 6.9;	
17	Health and Safety System, Article 6.10;	
18	Objective evidence of documented Fire Protection, Fire Fighting and Training Procedure, Article 6.11;	
19	Hazardous Materials, Bidder's acknowledgement, Article 6.12 / Annex A, Section 7.7;	
20	Insurance Requirements – letter , Article 6.13;	
21	Proof of welding certification, Article 6.14;	

22	Project Management, Article 6.15 para 4;	
23	List of subcontractors, Article 6.16;	
24	Example of Quality Control Plan, Article 6.17;	
25	Example of an Inspection and Test Plan, Article 6.18;	
26	Details of Environmental Emergency Response Plan, Details of Formal Environmental Training, Article 6.19.	

## J2 Deliverables after Contract Award

Item	Description	Reference	Due By
1	Insurance requirements as per Annex "D"	Article 7.12 and Annex "D"	10 Working Days after Contract award
2	Revised Work Schedule	Article 7.18	5 Working Days after Contract award
3	Contract Financial Security	Article 7.15	5 Working Days after Contract award
4	The Contractor's Quality Control Plan	Article 7.23	5 Working days after Contract award
5	The list of Government specialized loaned equipment that the Contractor intends to request.	Article 7.30	5 Working days after Contract award
6	List of welders with valid certificates	Articles 6.14 / 7.31	5 Working days before start of the Work

## 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

## ANNEX K

### PART 3 OF THE BID SOLICITATION

#### ELECTRONIC PAYMENT INSTRUMENTS

*As indicated in Part 3, clause 3.2, the Bidder must identify which electronic payment instruments they are willing to accept for payment of invoices.*

The Bidder accepts any of the following Electronic Payment Instrument(s): ( )

VISA Acquisition Card;

( ) MasterCard Acquisition Card;

( ) Direct Deposit (Domestic and International);

( ) Electronic Data Interchange (EDI);

( ) Wire Transfer (International Only);

( ) Large Value Transfer System (LVTS) (Over \$25M)

# **CCGS Samuel Risley**

## **2019 DRYDOCK**

Specification No. 896.18

**May 28 ,2019**

Prepared by:  
Marine Engineering  
Integrated Technical Services  
Canadian Coast Guard  
520 Exmouth Street  
Sarnia, ON  
N7T 8B1

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## **G 1.0**      **GENERAL NOTES**

### **G 1.1**      **Vessel Particulars**

Name:	CCGS Samuel Risley
Type:	Type 1050 Medium Endurance Multitasked Vessel, Ice Class 1A Super/ Arctic Class 2
Propulsion:	Twin rudder, direct drive diesel, twin screw, controllable- pitch shrouded propellers, Tunnel Type CPP Bow thruster and Tunnel Type CPP Stern thruster.
Year Built:	1985
Principal Dimensions:	
Length:	69.73 meters
Breadth, molded:	13.7 meters
Loaded Draft:	5.817 meters
Tonnage, displ:	2935 tonnes

## G 1.2 References

The latest edition, at the time of contract signing, of all Acts, regulations, standards, publications, and procedures listed below are to be used as reference. The Contractor must ensure all work completed in the specification are done to all pertinent federal and territorial regulations and standards. CCG procedures are to be used as a guide if no other regulation takes precedence.

<b>Publications</b>	<b>Title</b>
CCG 5737	Fleet Safety Manual
TP 127	Ships Electrical Standards, 05/2018
NFPA 306 2014	Standard for the Control of Gas Hazards on Vessels
TP 3669	Standards for Navigating Appliances and Equipment
TP 11469	Guide to Structural Fire Protection
TP 14231	Marine Occupational Health and Safety Program
TP 14612	Procedures for Approval of Life-saving Appliances and Fire Safety Systems, Equipment and Products
IEEE 45-2002	Institute of Electrical and Electronics Engineers, Recommended Practice for Electrical Installations on Shipboard
70-000-000-EU-JA-001	Specification for the Installation of Shipboard Electronic Equipment
IEC 60533	Electrical and Electronic installations in ships – Electromagnetic Compatibility
EPS Report 1/RA/2	Environmental Code of Practice for the Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems - Environment Canada
NFPA 10	Standard for portable fire extinguishers
18-080-000-SG-003 (formerly DFO/5884 - TP 12445E)	Paints And Coatings Standard

<b>Standards</b>	<b>Title</b>
CCG	CCG CAD using AutoCAD <a href="http://intra.coast-guard.ca/folios/00922/docs/ccgststden.zip">http://intra.coast-guard.ca/folios/00922/docs/ccgststden.zip</a>
CCG	Canadian Coast Guard Specification for Electronic Technical Data Deliverables CA-014-000-NU-TD-001
CCG	Colour Coding Standard for Piping Systems 30-000-000-ES-TE-001
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
CSA W178.2	Certification of Welding Inspectors
ISO 9712:2005	International Standards for NDT
CT-043-EQ-EG-001-E	Welding Specification, August 2017 <a href="http://intra.coast-guard.ca/folios/00922/docs/WeldingSpecification-eng.pdf">http://intra.coast-guard.ca/folios/00922/docs/WeldingSpecification-eng.pdf</a>
SSPC	The Society for Protective Coatings
ISO 8501-1:2007	Preparation of steel substrates before application of paints and related products
ISO 10816-1:1995	Mechanical vibration -- Evaluation of machine vibration by measurements on non-rotating parts -- Part 1: General guidelines
ASME Y14.100	American Society of Mechanical Engineers Y14.100 - 2017 Engineering Drawing Practices - Nov. 14, 2017

<b>Regulations</b>	<b>Title</b>
MOHS	Maritime Occupational Health and Safety
CSA	Canada Shipping Act, 2001
Machinery Regs.	Marine Machinery Regulations (SOR/90-264)

Vessel Fire Safety Regs.	Vessel Fire Safety Regulations (SOR/2017-14)
Hull Regs.	Hull Inspection Regulations (C.R.C., C. 1432)
Canada Labour Code	Canada Labour Code (R.S.C., 1985, c. L-2)
Federal Halocarbon Regulations	Federal Halocarbon Regulations, 2003 (SOR/2003-289).

### **G 1.3      Abbreviations**

ABS	American Bureau of Shipping
CA	Contract Authority (PSPC)
CCG	Canadian Coast Guard
CLC	Canada Labour Code
CSM	Contractor Supplied Material
CSA	Canadian Standards Association
CWB	Canadian Welding Bureau
DFO	Department of Fisheries and Oceans
FSM	Fleet Safety Manual (CCG)
FSR	Field Service Representative
GSM	Government Supplied Materials
HC	Health Canada
IEEE	Institute of Electrical and Electronic Engineers
LOA	Length Over All
MOHS	Maritime Occupational Health and Safety
NDT	Non Destructive Testing
OEM	Original Equipment Manufacturer
OHS	Occupational Health and Safety
PSPC	Public Services and Procurement Canada
RO	Registered Organization as defined by Canada Shipping Act
SDS	Safety Data Sheet
SSMS	Safety & Security Management System
TBS	Treasury Board of Canada Secretariat
TCMS	Transport Canada Marine Safety
TA	Technical Authority – Owner’s Representative (CCG)
WHMIS	Workplace Hazardous Material Information System

**G 1.4      Occupational Health and Safety**

G 1.4.1      The Contractor and all sub-contractors must follow Occupational Health and Safety (OHS) procedures in accordance with applicable federal and provincial OHS regulations ensuring that Contractor activities are carried out in a safe manner and do not endanger the safety of any personnel.

G 1.4.2      The Contractor and Contractor's employees will not have access to the vessel's washrooms and crew mess facilities. The Contractor must provide the necessary amenities for the Contractor's and sub-contractors employees as required.

**G 1.5      Access to Worksite**

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

**G 1.6      Workplace Hazardous Materials Information System (WHMIS)**

G 1.6.1      The Contractor must provide the TA with Safety Data Sheets (SDS) for all Contractor supplied WHMIS controlled products.

G 1.6.2      The TA will provide the Contractor with access to SDS sheets for all controlled products on the ship for all specified work items.

**G 1.7      Smoking in the Work Space**

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

**G 1.8      Clean and Hazard Free Worksite**

G 1.8.1      Before the Contractor starts any work on the vessel 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 vessel. Copies of this CD or DVD are to be provided to the TA for reference purposes within 48 hours of the start of the contract.

- G 1.8.2 The Contractor, during the work period, must maintain those areas of the vessel which Contractor personnel use to access areas where work is to be undertaken, in a clean condition, free from debris and remove garbage daily.
- G 1.8.3 Areas that pose a hazard as a result of the specification work are to be secured and clearly identified by the Contractor with signage to advise and protect all personnel from the hazard in accordance with applicable Canada Labour Code requirements.
- G 1.8.4 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 vessel to the state of cleanliness in which the vessel was at the start of the contract period.
- G 1.8.5 Once all known work and final clean-up has been completed the Contractor's QA Representative and the TA must perform a 'walk through' of the vessel to view all areas where work was performed by the Contractor. Any deficiencies or damage noted must be recorded and compared to the photos and if deemed to have been caused by the Contractor as a result of the work the damage must be repaired by the Contractor at no cost to the Coast Guard.

## **G 1.9 Fire Protection**

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

and certify at his cost, container(s) or systems that are discharged as a result of such work.

**G 1.10 Touch-up / Disturbed Paint**

G 1.10.1 Unless stated otherwise the Contractor must supply and apply two coats of marine primer compatible with the vessel's existing coating system to all new and/or disturbed metal surfaces.

G 1.10.2 The Contractor must prepare all new and disturbed steelwork to the paint manufacturer's standards prior to painting.

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

G 1.11.1 CCG / DFO employees and other personnel such as manufacturer's representatives and/or TCMS or Class surveyors may carry-out other work including work items not included in this specification, onboard the vessel during this work period. Every effort will be made by the TA to ensure this work and the associated inspections and/or surveys do not interfere with the Contractor's work. The Contractor will not be responsible for coordinating the related inspections or payment of inspection fees for this work unless otherwise specified.

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

G 1.12.1 The Contractor must contact, coordinate and schedule all regulatory inspections and/or class surveys by the applicable authority: i.e. TCMS, ABS, HC, Environment Canada or others as required by the specification.

G 1.12.2 Any documentation generated by the above inspections and/or surveys to show that the inspections and/or surveys were conducted (i.e. original signed and dated certificates) must be provided to the TA.

G 1.12.3 The Contractor must not substitute inspection by the TA for the required regulatory inspections or class surveys.

G 1.12.4 The Contractor must provide timely advance notification (minimum of 24 hours) of scheduled regulatory inspections and/or class surveys to the TA so they may witness the inspection.

**G 1.13 Test Results and Data Book**

G 1.13.1 The Contractor must develop a Test and Trials Plan which must include as a minimum, all tests and trials stated in the specification. This plan must be provided for TA review 1 week prior to the originally scheduled Tests and Trials commencement.



- G 1.13.2 All tests, measurements, calibrations and readings must be recorded, signed by the person taking the measurements, dated and provided in report format both in hard copy and electronic format, to the TA.
- G 1.13.3 Recorded dimensions must be to a precision of three decimal places (unless otherwise stated) in the measuring system currently in use on the vessel.
- G 1.13.4 The Contractor must provide to the TA current and valid calibration certificates for all instrumentation used in the Test and Trials Plan showing that the instruments have been calibrated in accordance with the manufacturer's instructions.
- G 1.13.5 Hard copy reports must be bound in standard 3-ring binders, type written on letter size paper and indexed by specification number. Electronic copies must be in unprotected Adobe PDF format and provide on CD-ROM media. The Contractor must provide 2 hard copies and 1 electronic copy of all reports.
- G 1.13.6 All documentation from the contract period must be inserted in a data book and delivered to the TA on completion of the contract.

**G 1.14 Contractor Supplied Materials and Tools**

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

**G 1.15     Restricted Areas**

- G 1.15.1     The Contractor must not enter the following areas except to perform work as required by the specifications: all cabins, offices, workshops, Engineers' office, Wheelhouse, Control Room, all washrooms, Galley, Mess Rooms, Lounge areas and any other areas restricted by signage.
- G 1.15.2     The Contractor must give the TA 24 hours advance notice prior to working in any accommodation areas or office spaces. This will allow CCG adequate time to move personnel and secure the areas.

**G 1.16     Contractor Inspections and Protection of Equipment and the Worksite**

- G 1.16.1     The Contractor must coordinate an inspection with the TA on the condition and location of items to be removed prior to carrying out the specified work or to gain access to a location to carry out the work.
- G 1.16.2     Any damage incurred as a result of the Contractor's work and that is attributable to the Contractor's work performance must be repaired by the Contractor at his expense. Materials used in any replacement or repairs must meet the criteria for Contractor supplied material noted above in section Contractor Supplied Materials and Tools.
- G 1.16.3     The Contractor must protect all equipment and surrounding areas from damage. Work areas are to be protected from the ingress of water, welding and blasting grit etc. Temporary covers to work areas must be installed.
- G 1.16.4     The Contractor must protect the vessel from the possibility of vermin infestation (insect/mammal). If an infestation does occur during the contract period the Contractor must bear all costs to ensure the vessel is made vermin free before the vessel's departure and contract completion.

**G 1.17     Recording of Work in Progress**

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

**G 1.18     List of Confined Spaces**

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

**G 1.19     Lead Paint and Paint Coatings**

- G 1.19.1     The Contractor must not use lead based paints.

G 1.19.2 CG ships have been painted with lead based paints in the past and as a result some of the Contractor's processes such as grinding, welding and burning may release this lead from the coatings. The Contractor must ensure that coatings in the affected work areas are tested for lead content and that the work is performed in accordance with applicable Federal and Provincial regulations.

G 1.19.3 The Contractor must provide HC product approval for underwater hull surface paints controlled by HC and the Pest Management Regulatory Agency.

**G 1.20 Asbestos Containing Materials**

G 1.20.1 The Contractor must not use any asbestos containing materials.

G 1.20.2 Handling of any asbestos containing materials must be performed by personnel trained and certified in the removal of asbestos in accordance with Federal, Provincial and Municipal regulations in effect and in accordance with the Fleet Safety and Security Manual. The Contractor must provide the TA with disposal certificates for all asbestos containing material removed from the vessel indicating that the disposal was in accordance with Federal, Provincial and Municipal regulations in effect.

**G 1.21 Removed Materials and Equipment**

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

**G 1.22 Work Aloft**

G 1.22.1 Any work aloft onboard the vessel during the maintenance/refit period must be conducted in accordance with the Safety Management System in effect. Radars must be locked out to prevent operation while personnel are working aloft on the mast or on the wheelhouse top.

**G 1.23 Assembly of Components**

G 1.23.1 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. All components must be assembled in accordance with original manufacturer's specifications and recommendations.

G 1.23.2 Covers, cowlings and components damaged by the Contractor must be replaced with new CSM covers, cowlings, or components.

G 1.23.3 Where torque specifications are not provided by the manufacturer, the applicable SAE, ANSI, or BS1083 nut and bolt standard torque must be used.

**G 1.24 Storage and Protection of Equipment**

G 1.24.1 Equipment (i.e. covers, cowling and other items that may need to be removed and stored) must be stored in accordance with the equipment manufacturer's or equipment vendor's specific storage instructions. The Contractor must make these instructions available to the TA.

G 1.24.2 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.

G 1.24.3 The Contractor must take precautions to ensure that surfaces and components of equipment installed on the vessel are protected against damage, soiling, and contamination as a result of contracted work.

G 1.24.4 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.

G 1.24.5 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, media (sand) blasting, grinding and painting.

G 1.24.6 Any damage to surfaces, equipment, furnishings or decor incurred prior to acceptance must be returned to As-Delivered condition by the Contractor.

G 1.24.7 All openings in machinery and/or systems must be kept covered by fitted solid inserts or covers prior to connections being made.

G 1.24.8 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.

G 1.24.9 The Contractor must protect the vessel 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 vessel is made vermin free before the vessel's departure and contract completion.

**G 1.25     Halocarbon containing Systems**

- G 1.25.1 All work conducted on Halocarbon containing systems, must be in accordance with the Federal Halocarbon Regulations, 2003 (SOR/2003-289).

**G 1.26     Hot Work**

- G 1.26.1 All hot work must be carried out in accordance with OHS, MOHS and the FSM 7.B.4.

**G 1.27     Welding Certification**

- G 1.27.1 For any work requiring the application of fusion welding for steel structures the Contractor and/or the sub-contractor welders must be certified by the Canadian Welding Bureau in accordance with CSA Standards W47.1-03, latest revision – Certification of Companies for Fusion Welding of Steel Division 2 Certification as a minimum. Current copies of certification (including those of the welders) must be provided to the TA.

**G 1.28     Electrical Installations**

- G 1.28.1 All electrical installations and repairs must be carried out in accordance with the latest revisions of Transport Canada Marine Safety Electrical Standard TP127E and IEEE Standard 45 Recommended Practice for Electrical Installation on Ships.

**G 1.29     Potable Water**

- G 1.29.1 Any time a Potable Water tank, fill or vent lines are opened, worked on, disconnected, exposed to workspaces, painted, cleaned, entered the following cleaning procedures must take place by the Contractor.
- G 1.29.2 The Contractor must use CCG Standards for Potable Water Quality located in Section 7.F.12 of the FSM when commissioning all potable waters tanks affected by Contractor work.
- G 1.29.3 The tank surfaces must be cleaned of all debris and sludge and wiped dry. All debris and sludge must be disposed of ashore by the Contractor. The Contractor must bid on removing one cubic meter of water/debris from the tanks.
- G 1.29.4 The Contractor must coat all disturbed paint or paint renewal sections with Potable Water Tank paint Interline 925 using manufacturer's recommendations for preparation and application.
- G 1.29.5 The potable water tanks must not be sealed and filled with any liquid until the coating cure time has elapsed. Failure of the Contractor to ensure that tank coatings have fully

cured and are no longer off gassing remains the Contractor sole responsibility. Coating specifications from the manufacturer for mixing and application must be strictly adhered to. Any resulting contamination to the potable water system or damage to the existing tank coatings will be repaired at the Contractors expense.

- G 1.29.6 The Contractor must replace all tank access cover gaskets with new 1/8 inch thick fiber reinforced neoprene gaskets suitable for potable water service.
- G 1.29.7 Potable water tanks must be filled with hyper-chlorinated potable water for a period of 24 hours. The hyper-chlorinated water will have a free chlorine content of 50 ppm (part per million). The Contractor must certify to the TA that the water used for the disinfection meets these requirements. If the Contractor uses calcium hypochlorite to produce the hyper-chlorinated potable water, the water will be filtered to remove all calcium before it is introduced into the potable water tanks.
- G 1.29.8 Following the 24 hour disinfection period, the Contractor must drain and flush the potable water tanks to attain the following readings for the potable water:

Free Chlorine	0.2 and 0.4 ppm;		
E. Coli	0 per 100ml	Nitrate/Nitrite	45 mg/L
Total coliform	0 per 100ml	Mercury	0.001 mg/L
Turbidity	1 NTU	Selenium	0.01 mg/L
Antimony	0.006 mg/L	Uranium	0.02 mg/L
Barium	1.0 mg/L	Benzene	0.005 mg/L
Boron	5.0 mg/L	Xylenes	0.3 mg/L
Cadmium	0.005 mg/L	Flouride	1.5 mg/L
Chromium	0.05 mg/L	Lead	0.01mg/L
Copper	1.0 mg/L	Sodium	200 mg/L
Iron	0.3 mg/L	Zinc	5 mg/L

Manganese	0.05 mg/L	Ethylbenzene	0.00024 mg/L
pH	6.5-8.5 pH units	Toluene	0.024 mg/L
Colour	15 TCU	Sulphahtes	500 mg/L
TDS	500 mg/L	Chloride	250 mg/L

- G 1.29.9 These readings must be verified by an independent laboratory that is provincially licensed to perform these tests on potable water. Copies of all final test results must be presented to the TA.
- G 1.29.10 The Contractor must flush the water tanks until the free chlorine content of the water in the tanks drops to an acceptable level of no more than a maximum of 5 PPM.
- G 1.29.11 The Contractor must dispose of all hyper-chlorinated water in accordance with Federal, Provincial, and Municipal Regulations in effect. All disposal certificates must be provided to the TA.
- G 1.29.12 The Contractor must re-fill all potable water tanks to their initial tank soundings prior to undocking the vessel using a certified potable water source.

## **S 1.0 SERVICES**

### **S 1.1 GENERAL**

- S 1.1.1** The Contractor must supply the following services to the vessel for the entire work period and disconnect upon completion of the work period. The Contractor must be responsible for the re-establishment of services if the vessel is moved during the work period.
- S 1.1.2** Each of the services noted below must be separately priced in the Contractor's submitted bid.
- S 1.1.3** The Contractor must be responsible for supplying all material, hoses, cables etc. and labour required to connect and disconnect the services to the vessel. Unless otherwise stated these services must be available 24 hours a day 7 days a week for the entire contract period.
- S 1.1.4** All staging, crange, screens, lighting and any other support services, equipment and materials necessary to carry out the work identified in these specifications must be Contractor supplied.

### **S 1.2 BERTHING**

**S 1.2.1** The berthing and mooring facilities must be suitable for a vessel of this size in local weather / tide / sea conditions. Fenders must be supplied by the Contractor to prevent the vessel from contacting the wharf in local weather / tide / sea conditions.

**S 1.2.2** The length of the dock must be a minimum of 90% of the length of the vessel (LOA).

**S 1.2.3** During the contract period, when the ship is not in the dry dock, the ship must be berthed at the Contractor's wharf at a safe and secure location with a minimum clearance of 1 meters under the vessel at extreme low tide to ensure the vessel will not touch bottom.

**S 1.2.4** The Contractor must be responsible for all movements of the vessel, including berthing and mooring of the vessel for the contract period and arrangements and costs for line handlers, tugs and pilots.

**S 1.3** **MOORING LINES**

**S 1.3.1** The Contractor must be responsible for providing the necessary mooring lines and labour required to secure the vessel alongside the facilities. Ship's mooring lines are not to be used.

**S 1.4** **GANGWAYS**

**S 1.4.1** Contractor must supply the labour and services required for the installation and removal of two gangways, complete with handrails, safety nets and lighting for the duration of the contract. The Contractor must be required to supply and maintain the gangways.

**S 1.4.2** Any movement of the gangways required by the Contractor will be at the expense of the Contractor.

**S 1.4.3** Gangways must be at separate locations to facilitate fire evacuation.

**S 1.5** **TELEPHONE SERVICE**

**S 1.5.1** Contractor must supply and connect 1 telephone line to the internal communications center of the ship. The phone line(s) must be disconnected at the end of the contract.

**S 1.5.2** One telephone line provided must be maintained 24 hours a day to ensure communications with outside lines at all times. The Contractor must provide a telephone book of the local areas as well as a list of emergency numbers. Cellular phones are not acceptable.

**S 1.5.3** Any long distance charges made on this line must be to the CCG account.



**S 1.5.4** Any Contractor's plant telephones are to be in addition to the above.

**S 1.6** **ELECTRICAL POWER**

**S 1.6.1** The Contractor must be responsible for supplying 600 Volt Alternating Current, 60 Hertz, 3 Phase, 200 Ampere service electrical power for the duration of the contract.

**S 1.6.2** The Contractor must be responsible for supplying and connecting the necessary shore cable to the ship's shore power connection.

**S 1.6.3** The Contractor must be responsible for ensuring that the correct phase rotation on a 3 – phase system is established prior to energizing the ship's distribution system. Any changes to the ship's power system to accommodate the Contractor supplied shore power connections must be returned to the original setup by the Contractor upon the disconnection of the Contractor supplied power cable and equipment. All work must be carried out by certified electricians.

**S 1.6.4** The Contractor must supply all power to the vessel through Contractor supplied kilowatt-hour meters. The Contractor must read the kilowatt-hour meter at the following times in the presence of the TA:

**S 1.6.5** When the connection is first made;

**S 1.6.6** When the care and custody of the vessel becomes that of the contractor;

**S 1.6.7** When the crew return and care and custody of the vessel becomes that of Coast Guard; and,

**S 1.6.8** When the vessel is disconnected from the contractor's power supply.

**S 1.6.9** The Contractor must provide a calibration certificate for the kilowatt-hour meter.

**S 1.6.10** The Contractor must supply a price quote per kilowatt-hour for electrical power for the duration of the contract period.

**S 1.6.11** Final price for this item must be determined at the end of the contract and crown will pay for the power consumption while the vessel is not in the care and custody of the contractor using PSPC 1379 action.

**S 1.7** **POTABLE WATER SUPPLY**

**S 1.7.1** The Contractor must supply potable water to re-fill the vessel's potable water tanks to the same soundings as when the vessel entered the dry dock.

**S 1.7.2** The water must be supplied from an approved municipal drinking water supply system that has been certified safe for consumption. (Reference CCG FSM 7A12 Potable Water Quality) reference section G 1.29.

**S 1.8 FIRE MAIN CHARGING SERVICE**

**S 1.8.1** The Contractor must supply a separate and continuous uninterrupted water supply through isolation valves via a calibrated pressure regulator and calibrated flow meter to the ship's fire main system. Supply pressure must be at 80 to 110 psig. Pressure must be maintained at all times.

**S 1.8.2** The Contractor must read the water meter at the beginning of the contract period and again at the end. The readings must be taken in the presence of the TA and TI and must be used to calculate the total water usage from this connection.

**S 1.8.3** Provisions must be made by the Contractor to ensure that the water supply does not freeze during cold weather. The Contractor must inform the TA and security staff of the location of shut-off valve(s).

**S 1.8.4** The Contractor must supply a price quote per cubic meter of water. Final price for this item must be determined at the end of the contract once the meter has been read.

**S 1.9 VESSEL SECURITY**

**S 1.9.1** This work is going to take place with the vessel "out of commission" and therefore in the care, control and custody of the Contractor. The Contractor must provide for the safety and security of the vessel while it is under contract. The Contractor remains liable for all damage and theft while the vessel is in its care and custody. There is no requirement to have personnel living aboard.

**S 1.10 PARKING AT CONTRACTOR'S FACILITY**

**S 1.10.1** The Contractor must provide 3 parking spaces for the exclusive use of the TA and project team for the duration of the contract period.

**S 1.11 PROJECT FACILITIES**

**S 1.11.1** The Contractor must provide furnished, private and secure office space for the use of the TA and CCG personnel during the contract period. The office space must be located adjacent to the dry dock and vessel. The Contractor must provide commercial quality furnishings for three persons.

The Contractor must supply and provide internet connections for three computers and one telephone land-line and telephone. Any long distance charges made on this

line must be to the CCG account; total must be covered under PSPC 1379 action. The internet connections must be direct and not through the Contractor's security network.

- S 1.11.2** The Contractor must supply clean toilet and wash-up facilities for the use of the TA and CA within the same building or contiguous to the same building for the duration of the work period.

**S 1.12 TEMPORARY DECK COVERINGS**

- S 1.12.1** A temporary deck covering of new material is to be installed as soon as possible and before the work begins on the vessel.

- S 1.12.2** To protect the alleyway flooring the Contractor must supply and install 158 m<sup>2</sup> - 3 mm MDF or Masonite sheeting over all deck surfaces on the Main, Boat, Focsle and Bridge decks, including the Engine Control Room, the Mess room, and Galley. The Wheelhouse carpet must be covered in 3mm MDF or Masonite sheet.

- S 1.12.3** All seams and edge joints must be taped to secure the coverings and prevent ingress of dirt.

- S 1.12.4** In the wheelhouse the sheet to sheet joints must be taped. The MDF must not be taped to the carpet.

- S 1.12.5** Upon completion of the dry-docking/refit, the Contractor must remove and dispose of all the protective coverings installed. Any tape residue must be removed from the decks by the Contractor.

**S 1.13 BLACK AND GREY WATER SERVICES**

- S 1.13.1** The black and grey water system must be put out of service prior for the contract duration.

- S 1.13.2** The Contractor and Contractor's employees must not have access to the vessel's washrooms and crew mess facilities. The Contractor must provide the necessary amenities for the Contractor's and sub-Contractors employees as required.

- S 1.13.3** The Contractor must pump ashore the contents of the black water treatment plant. Following the removal of the treatment plant contents the Contractor must open up the plant and hose down (with fresh water ) and pump ashore residuals to leave the treatment plant free of any solids. The treatment plant holds approximately 6 cubic meters of black water. The treatment plant is a Hamworthy Supertrident ST4 and

require 3 chambers to be pumped and flushed – main collection, centre hopper and the recirculation/discharge tanks.

## **S 2.0 DOCKING AND UNDOCKING**

### **S 2.1 IDENTIFICATION**

**S 2.1.1** The Contractor must dock the vessel, carry out the work identified in this specification and then undock the vessel. The Contractor must discuss with the TA any comments, concerns or observations they may have regarding the effect of work on the vessel's stability or carrying capacity. Additionally any work item that, in the opinion of the Contractor may pose a vessel structural integrity problem is to be brought to the attention of the TA. The Contractor must advise the TI and TA of the details of any major changes in the distribution of weights on the vessel, while the vessel is in dry-dock.

### **S 2.2 REFERENCES**

**S 2.2.1** Drawings:

S30102dp1- Docking Plan

**S 2.2.2** Documentation:

Samuel Risley Tank Sounding Tables

Samuel Risley Intact Stability Book

Samuel Risley Damaged Stability Book

### **S 2.3 STATEMENT OF WORK**

**S 2.3.1** The Contractor must supply all labour, materials, equipment, tug services and facilities to dock and undock the vessel.

**S 2.3.2** The Contractor must provide labour and services for the handling of the vessel's mooring lines and tug assistance to perform the docking and undocking of the vessel and any other vessel movements required during the contract period.

### **S 2.4 DOCKING**

**S 2.4.1** The Contractor must prepare blocks and shoring to maintain the alignment of the vessel's hull and machinery throughout the docking period.

**S 2.4.2** The Contractor must refer to the docking plan for dry docking of vessel.

**S 2.4.3** The Contractor must record all tank soundings, draft, trim and list of the vessel, and perform the stability calculations for the docking of the vessel. Completed stability

calculations must be forwarded to the TA two business days prior to docking the vessel.

**S 2.4.4** The vessel must be docked so that all docking plugs, transducers, anodes and sea inlet grids and keel coolers are clear and accessible. A minimum clearance of 1.5 meters must be available below the keel. If any hull fittings are covered, the Contractor must provide all labour and materials and make alternative arrangements to drain tanks and/or move blocks to complete the specified work.

**S 2.4.5** The Contractor must provide a ground cable between the vessel and the dock while the vessel is docked as per Ship Safety Bulletin 06/1989.

**S 2.5** **UNDOCKING**

**S 2.5.1** The Contractor must ensure that all shipside openings, including valves, drain and docking plugs are secure before flooding the dry dock.

**S 2.5.2** During the undocking of the vessel, the Contractor must have sufficient personnel on hand such that all ship side valves can be inspected for leaks. Once sufficient water depth has been obtained, all submerged valves must be opened, and verified that no bonnets, flanges or valve packings are leaking. Any leaks must be rectified by the Contractor at the Contractor's expense prior to the close of the contract.

**S 2.5.3** The Contractor must ensure all tanks are filled to the soundings recorded prior to docking. The Contractor must perform the necessary stability calculations for undocking the vessel taking into account any weight distribution changes as a result of the work of these specifications. The calculations must be forwarded to the TA 24 hours prior to undocking.

**S 2.5.4** Prior to undocking, the TA must be given the opportunity to transfer fuel from a double bottom tank to the Day tank and emergency generator tank using the shipboard system.

**S 2.5.5** The Contractor must supply, install and remove upon completion, any necessary fittings and lugs required 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.

**S 2.5.6** The Contractor must supply all labour necessary to handle the ship's lines during the undocking process.

**S 2.5.7** The Contractor is responsible for supplying the services of tugs to ensure that the vessel is undocked in a safe manner and not damaged during the procedure.

**S 2.6** **PROOF OF PERFORMANCE**

**S 2.6.1** 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 vessel is ready to be undocked.

**S 2.6.2** The Contractor must provide the initial tank soundings and stability calculations prior to the docking of the vessel.

**S 2.6.3** The Contractor must provide the stability calculations and soundings prior to undocking the vessel.

**S 2.6.4** The above requirements must be provided in accordance with the Test and Trials Plan.

## **10.0 SAFETY AND SECURITY – Not Used**



## **11.0 HULL AND RELATED STRUCTURES**

### **11.1 UNDERWATER HULL INSPECTION**

#### **11.1.A Identification**

- 11.1.A.1 The Contractor must clean the underwater hull area within 24 hour of docking the vessel and must do a survey of the shell plating with the TA and the attending ABS Surveyor within 72 hours of docking the vessel. This inspection must identify areas of the underwater and above water hull that must be grit blasted and have new hull coatings applied. The Contractor must repair any butt and seam welds identified during the hull inspection.

#### **11.1.B References**

- 11.1.B.1 Drawings:

S30109mil – Shell Expansion

- 11.1.B.2 Documentation:

Canada Shipping Act 2001 (Latest Version)

- 11.1.B.3 The total underwater hull area of the vessel is approximately 1650 sq. meters.

#### **11.1.C Statement of Work**

- 11.1.C.1 The Contractor must supply all necessary staging and man lifts for the work of this specification, including inspections by ABS Surveyor and the TA.

##### **11.1.C.2 Underwater Hull Cleaning**

- 11.1.C.2.1 The Contractor must water blast the entire underwater hull surface of the vessel to the deep water load line within 24 hours of docking the vessel. The water blast pressure must be a minimum of 3000 psi / maximum 6000 psi. The Contractor must remove all marine growth, including slime, from the underwater hull surface of the vessel.

##### **11.1.C.3 Underwater Hull Inspection**

- 11.1.C.3.1 The Contractor, together with the TA and the attending ABS Surveyor, must inspect the cleaned underwater hull area of the vessel.

- 11.1.C.3.2 The Contractor must mark up a copy of the shell expansion plan with any identified areas of butts and seam welds requiring repair.
- 11.1.C.3.3 The Contractor must repair by gouging and re-welding the hull welds identified during the inspection. The Contractor must submit in the bid a price a per meter cost for preparation and repair of the hull seams and butts welds and must bid on a total of 40 meters. Pricing to be adjusted up or down by 1379.
- 11.1.C.3.4 The Contractor must grit blast any weld seam clear of all hull coatings to bare metal to a distance of 80 mm on either side of the weld. The Contractor must gouge the affected weld area to a depth of 6 mm and must re-weld the seam areas with multiple passes finishing the weld off with a cap pass.
- 11.1.C.3.5 The Contractor must supply the welding procedure for the seams and butts welding 24 hours prior to welding being completed. Reference must be made to CCG Welding Specifications.
- 11.1.C.3.6 The finished weld profile must be between 2 mm to 3mm above the adjoining plate, but in no place more than 3 mm above.
- 11.1.C.3.7 The Contractor will supply the welding procedure for the seams and butts welding. The welding procedure will include flux core wire welding of appropriate grades for the hull plate. The hull plate in this region is Lloyd's Grade E, and varies between 36 mm and 38.5 mm.
- 11.1.C.3.8 Welds must be inspected for conformity by the attending ABS surveyor for acceptance prior to the application of the hull coatings.
- 11.1.C.3.9 All welds that fail to meet ABS approval must be re-welded at the Contractor's expense and are subject to final ABS approval.
- 11.1.C.4 Hull Marking Renewals
  - 11.1.C.4.1 The Contractor will use 309L stainless steel flux core electrode wire or better with CO2/Argon gas shield to outline all hull markings identified in this specification to a 5 mm profile above the surface. The hull plate in this region is Lloyd's Grade E, and varies between 36 mm and 38.5 mm.
  - 11.1.C.4.2 The Contractor will complete the marking renewals prior to the hull coating application.
  - 11.1.C.4.3 Tank frame markings will be recoated with the hull coating system.
  - 11.1.C.4.4 The contractor to bid on the following;

- Renewing a total combination of 86 draft marks and tank frame markings with new welding;
- Two stern thruster symbols to be weld marked;

#### **11.1.D Proof of Performance**

- 11.1.D.1 Prior to any hull coating, the Contractor must have the welding repairs inspected and approved by ABS.
- 11.1.D.2 The Contractor must provide a Quality Assurance (QA) report indicating that all areas as defined in this specification have been inspected by the Contractor's QA Department and all areas of defects established by this survey have been identified for remedial action. This report shall be included in the Data Book reference section G 1.13.
- 11.1.D.3 The Contractor must include in the final report the details of the seam and butt welding that was completed. This report must detail the location and length of each weld, ABS Surveyor approval for each final weld and any testing results required in way of each weld. This report shall be included in the Data Book reference section G 1.13.

### **11.2 UNDERWATER HULL PAINTING**

#### **11.2.A Identification**

- 11.2.A.1 The Contractor must clean, grit blast and prepare underwater hull surfaces for recoating. Contractor must paint the underwater surfaces with the CCG define coating system as per manufacturer's recommendations.

#### **11.2.B References**

- 11.2.B.1 Drawings:

S30109mil – Shell Expansion

- 11.2.B.2 Documentation:

International Paint Technical Specification – CASL1-3BQP-PFR4/1

- 11.2.B.3 The total underwater hull area of the vessel is approximately 1650 sq. meters.

#### **11.2.C Statement of Work**

- 11.2.C.1 The Contractor must supply all necessary staging and man lifts for the work of this specification, including inspections by ABS Surveyor and the TA.

- 11.2.C.2 The Contractor must ensure that all items not being grit blasted or being painted are protected during the execution of this specification item.
- 11.2.C.3 All equipment protection must be removed at completion.
- 11.2.C.4 Where blasting grit and/or paint overspray damages equipment and/or other paint coatings, these defects must be rectified by the Contractor at the Contractor's expense prior to the completion of the contract.
- 11.2.C.5 The Contractor must ensure no ingress of blasting grit and/or overspray to the accommodation area of the vessel. All openings must be sealed or closed off to prevent the ingress of blasting grit and/or overspray.
- 11.2.C.6 The Contractor is responsible for the cleanup of all blasting grit, debris and overspray from the vessel's interior and exterior decks.
- 11.2.C.7 All overboard discharges must be plugged and protected from blasting grit and hull coating.
- 11.2.C.8 All scuttles, port holes and windows must be protected from blasting grit and paint/hull coating.
- 11.2.C.9 All deck machinery must be protected from blasting grit and the paint/hull coating.
- 11.2.C.10 The Contractor must dispose of all blasting grit and debris according to applicable Federal, Provincial, and Municipal regulations.
- 11.2.C.11 The Contractor must ensure that all coatings are applied within the allotted dry dock time period in order to allow for the full and proper curing of the coating to the vessel's hull prior to immersion.
- 11.2.C.12 Any application that results in an unacceptable coating to the FSR and TA must be redone (blasting included) at the Contractor's expense within the allotted dry dock time period.
- 11.2.C.13 Underwater Hull Coating Renewal
  - 11.2.C.13.1 The Contractor must obtain the services of a qualified International FSR to supervise the surface preparation and hull coating application.
  - 11.2.C.13.2 The representative must be present during the entire process to verify conformity to the manufacturer's required procedures for the preparatory work, equipment, procedures, storage, environmental conditions and application of the hull coating.

11.2.C.13.3 The Contractor must re-coat as per the recommendation of the International FSR all disturbed areas after ABS has inspected and all identified welds have been repaired and approved.

11.2.C.13.4 For the purpose of bidding, the Contractor must submit in the bid a price per square meter cost for grit blasting the underwater hull to a SSPC SP-10 standard and coating the vessel with single coat of Intershield 163 - Inerta 160 Black; with coating thickness of 20 mils DFT minimum on the following;

- 1650 m<sup>2</sup> of underwater hull
- Port and Starboard rudders
- Port and Starboard propeller nozzles
- Port and Starboard rope guards
- Bow thruster tunnel

Pricing to be adjusted up or down by 1379.

11.2.C.13.5 The Contractor must adhere to all coating system requirements for the application of the coating manufacturer's requirements and must be inspected during preparatory work, application and completion by TA and NACE inspector.

11.2.C.13.6 Coast Guard will retain the services of an independent consultant to verify that the surface preparation, application and final coatings are in accordance with manufacturer's instructions. This consultant will be NACE coating certified and contractor must provide safe access to all work being performed under this section as well as storage and mixing locations.

#### 11.2.C.14 Renewal of Symbols and Lettering

11.2.C.14.1 The Contractor must renew a total combination of 40 draft marks with new welding.

11.2.C.14.2 The Contractor must supply and apply 2 coats of Intersheen 579 white epoxy paint to outline and paint all ships side lettering after the completion of the application and curing of the hull coating system. This includes:

- a) Re-coating a total of 66 draft marks
- b) Re-coating 2 Plimsoll marks
- c) Re-coating a total of 20 tank frame markings with the existing hull coating system

#### **11.2.D Proof of Performance**

- 11.2.D.1 All coatings work carried out to the satisfaction of the TA and CCG provided NACE coating inspector.
- 11.2.D.2 The Contractor must provide a 'coating application report' from the FSR to the TA that details all of the particulars of the coating application process as completed by the Contractor.
- 11.2.D.3 The report must include details of all environmental conditions at the time any hull coatings were applied and at which areas on the hull the coating was applied and include but not be limited to the dry and wet bulb temperatures, relative humidity, dew point and the times when painting was started and stopped as well as the temperature of the product at application time and wet and dry film thickness gauge readings.
- 11.2.D.4 This report shall be included in the Data Book reference section G 1.13.

### **11.3 ABOVE HULL PAINTING**

#### **11.3.A Identification**

- 11.3.A.1 Contractor must sweep blast above waterline portion of hull and renew coating as per CCG requirements listed below.

#### **11.3.B References**

- 11.3.B.1 Drawings:

S30109mil – Shell Expansion

- 11.3.B.2 Documentation:

International Paint Specifications

- 11.3.B.3 The total area of hull above the ice belt excluding the removable bulwarks is approximately 650 m2.

#### **11.3.C Statement of Work**

- 11.3.C.1 The Contractor must supply all necessary staging and man lifts for the work of this specification, including inspections by ABS Surveyor and the TA.
- 11.3.C.2 The Contractor must ensure that all items not being grit blasted or being painted are protected during the execution of this specification item.

- 11.3.C.3 All equipment protection must be removed at completion.
- 11.3.C.4 Where blasting grit and/or paint overspray damages equipment and/or other paint coatings, these defects must be rectified by the Contractor at the Contractor's expense prior to the completion of the contract.
- 11.3.C.5 The Contractor must ensure no ingress of blasting grit and/or overspray to the accommodation area of the vessel.
- 11.3.C.6 All openings must be sealed or closed off to prevent the ingress of blasting grit and/or overspray.
- 11.3.C.7 The Contractor is responsible for the cleanup of all blasting grit, debris and overspray from the vessel's interior and exterior decks.
- 11.3.C.8 All overboard discharges must be plugged and protected from blasting grit and hull coating.
- 11.3.C.9 All scuttles, port holes and windows must be protected from blasting grit and paint/hull coating.
- 11.3.C.10 All deck machinery must be protected from blasting grit and the paint/hull coating.
- 11.3.C.11 The Contractor must dispose of all blasting grit and debris according to applicable Federal, Provincial, and Municipal regulations.
- 11.3.C.12 The Contractor must ensure that all coatings are applied within the allotted dry dock time period in order to allow for the full and proper curing of the coating to the vessel's hull prior to immersion.
- 11.3.C.13 Any application that results in an unacceptable coating to the FSR and TA must be redone (blasting included) at the Contractor's expense within the allotted dry dock time period.
- 11.3.C.14 Renewal of Symbols and Lettering
  - 11.3.C.14.1 The Contractor must renew a total combination of 40 draft marks with new welding.
  - 11.3.C.14.2 The Contractor must supply and apply 2 coats of Intersheen 579 white epoxy paint to outline and paint all ships side lettering after the completion of the application and curing of the hull coating system. This includes:
    - a) Re-coating the "SAMUEL RISLEY" located at the bow, Port and STBD
    - b) Re-coating the "SAMUEL RISLEY OTTAWA" located at the stern

### 11.3.C.15 Hull Coating Renewal – Above the Ice Belt

- 11.3.C.15.1 All fendering must be protected from grit blasting and hull coating. The Contractor must ensure that no coating is removed from between the fendering and the steel retention system.
- 11.3.C.15.2 The Contractor must punch mark the white stripe mark prior blasting the markings.
- 11.3.C.15.3 The Contractor must sweep blast and coat the following hull areas:
- 11.3.C.15.4 Hull areas identified in RED on drawing “ABOVE WATERLINE HULL COATING AREA”. For the purpose of the bidding process, the Contractor must bid on a total 650 m2 hull coating to be renewed.
- 11.3.C.15.5 All areas must be sweep blasted to remove any loose paint and provide a level re-coating surface for application of new top coating.
- 11.3.C.15.6 The Contractor must take care to leave the underlying primer coats intact as it is only the intention to re-new the top coat on the vessel sides.
- 11.3.C.15.7 The Contractor must grit blast the tops of the bulwarks in way of the bow section from the Focsle Deck railing aft to the bow (Port and Starboard). All areas must be grit blasted to bare steel: near white SA 2 1/2 SSPC SP10 63T. The profile of blasted steel must be a minimum of 3 mils.
- 11.3.C.15.8 The tops of the Bulwarks outlined in 11.3.C.15.7: 2 coats of Interprime 198, @ 3 mils DFT (Grey – first coat, red – second coat CPA099);
- 11.3.C.15.9 Above waterline hull and Bulwarks tops: 2 coats of Intersheen 579 @ 1.5 mils DFT (RED – RAL 3000) each coat;
- 11.3.C.15.10 White stripe: 3 coats of Intersheen 579 @ 1.5 mils DFT (WHITE – RAL9003) each coat;
- 11.3.C.15.11 Black border stripe: 3 coats of Intersheen 579 @ 1.5 mils DFT (Black – RAL 9004) each coat. 3 inch stipe bordering the white diagonal stripe.
- 11.3.C.15.12 The Contractor must adhere to all coating system requirements for the application of the coating system.
- 11.3.C.15.13 The Contractor must record ambient and dew point temperatures in the presence of the TA prior to the application of the coatings. These readings must be recorded and be provided in the final coating application report.



- 11.3.C.15.14 The Contractor must apply the Federal Identity Program Canada Word Mark decals. The word mark decals must be applied in the same location as they are currently.

#### **11.3.D Proof of Performance**

- 11.3.D.1 Prior to any hull coating, the Contractor must have all welding repairs inspected and approved by ABS.
- 11.3.D.2 All coatings work carried out to the satisfaction of the TA and CCG provided NACE coating inspector.
- 11.3.D.3 The Contractor must provide a Quality Assurance (QA) report indicating that all areas as defined in this specification have been inspected by the Contractor's QA Department and all areas of defects established by this survey have been identified for remedial action.
- 11.3.D.4 The Contractor must provide a 'coating application report' from the FSR to the TA that details all of the particulars of the coating application process as completed by the Contractor.
- 11.3.D.5 The report must include details of all environmental conditions at the time any hull coatings were applied and at which areas on the hull the coating was applied and include but not be limited to the dry and wet bulb temperatures, relative humidity, dew point and the times when painting was started and stopped as well as the temperature of the product at application time and wet and dry film thickness gauge readings.
- 11.3.D.6 The Contractor must include in the final report the details of the seam and butt welding that was completed. This report must detail the location and length of each weld, ABS Surveyor approval for each final weld and any testing results required in way of each weld.
- 11.3.D.7 This report shall be included in the Data Book reference section G 1.13.

### **11.4 SEA INLETS**

#### **11.4.A Identification**

- 11.4.A.1 The Contractor must remove the sea chest grids and clean the sea bays. The sea bay grids must then be re-installed.
- 11.4.A.2 The sea bay and grids are to be inspected by the TA and the attending ABS Surveyor.

**11.4.B References****11.4.B.1 Sea inlets:**

The Contractor will remove the grids and/or covers from the following:

DESCRIPTION	LOCATION	AREA
Port Sea Chest	Frames 25-27	50 m2
Stbd Sea Chest	Frames 25-27	50 m2
Sea Bay	Frames 25-27	130 m2
Port fire monitor sea chest	Frames 16-18	10 m2
Stbd fire monitor sea chest	Frames 16-18	10 m2

**11.4.B.2 Drawing:**

S30109mi1 – Shell Expansion

S30112as1 – CCGS Samuel Risley Sea Chest Grid Frames 24-26 (P&S)

S30112as2 – CCGS Samuel Risley Sea Chest Grid Fwd Frames 39-41 (P&S)

S30112as3 – CCGS Samuel Risley Sea Chest Grid Aft Frames 16-18 (P&S)

**11.4.C Statement of Work**

- 11.4.C.1 The Contractor must remove all sea chest grids. The Contractor must renew all fasteners with new CSM fasteners.
- 11.4.C.2 The Contractor will remove all sea chest and sea bay access covers.
- 11.4.C.3 The Contractor will note the condition of all defective bolts on the sea chest grids and bring these to the attention of the TA.
- 11.4.C.4 The Contractor will provide 60 bolts for the purpose of replacement if required. Bolt size for reference 1" – 8 TPI x 3.5" 316 Stainless with a ¾" hex socket head.
- 11.4.C.5 Aft Sea Chests have 16 fitted each and the foreword sea chests have 14 fitted each.

- 11.4.C.6 The Contractor must thoroughly clean all sea chests of all marine growth, dirt and debris.
- 11.4.C.7 All dirt and debris must be removed from the vessel and disposed of ashore in accordance with Federal, Provincial and Municipal regulations in effect.
- 11.4.C.8 The Contractor must bid on the removal and disposal of 5m<sup>3</sup> of solid debris from the sea chests and sea bay areas. Final pricing to be pro-rated and adjusted based on the volume of actual debris removed.
- 11.4.C.9 The Contractor must blast and renew the paint on all sea inlet grids to hull paint standards as detailed in section 11.2.
- 11.4.C.10 The Contractor, in conjunction with TA and the International Paint FSR will inspect and determine the condition of the coatings in the sea bays and the sea chests. Based on this inspection the TA and Contractor will agree on the areas to be re-coated from bare steel and any other necessary work to fully restore the coatings in the sea bays and sea chests.

#### **11.4.D Proof of Performance**

- 11.4.D.1 The Contractor must provide waste disposal certificates to the TA prior to the completion of the contract.
- 11.4.D.2 The Contractor must provide a report of the findings, work completed and final condition of the work of Section 11.4.
- 11.4.D.3 The Contractor must provide a 'coating application report' from the FSR to the TA that details all of the particulars of the coating application process as completed by the Contractor. The report must include details of all environmental conditions at the time any hull coatings were applied and at which areas on the hull the coating was applied and include but not be limited to the dry and wet bulb temperatures, relative humidity, dew point and the times when painting was started and stopped as well as the temperature of the product at application time and wet and dry film thickness gauge readings. This report shall be included in the Data Book reference section G 1.13.
- 11.4.D.4 The Contractor must provide survey credit documentation as per the Canada Shipping Act and associated regulations inspection requirements for the work of Section 11.4.

### **11.5 BILGE, SEWAGE, COFFERDAM AND VOID TANK CLEANING**

**11.5.A Identification**

- 11.5.A.1 The Contractor must open, remove docking plugs, fire hose wash, and remove debris from the void tanks, cofferdams, and sewage holding tanks as well as pump out engine room bilge areas.

**11.5.B References**

- 11.5.B.1 Documents

CMS30-103-MI Tank & Capacity Plan & Deadweight Scale

- 11.5.B.2 Tank Locations

Description	Location
Void Tank Aft	
Non-Watertight Void, Port	frame 27-32
Non-Watertight Void, Stbd	frame 27-32
Cofferdam, Center	frame 27-28
Cofferdam, Port	frame 22-25
Cofferdam, Stbd	frame 22-25
Sewage Holding Tank, Port	frame 37-39
Sewage Holding Tank, Stbd	frame 37-39

**11.5.C Statement of Work**

- 11.5.C.1 The Contractor must open, remove docking plugs, fire hose wash, and remove debris from the void tanks, cofferdams and sewage holding tanks.
- 11.5.C.2 The Contractor will bid on removing 0.5 cubic meters of solid debris from each ballast tank; to be adjusted up or down by 1379 process.
- 11.5.C.3 The Contractor will bid on removing 5,000 liters of sewage and sludge from each Sewage Holding Tank; to be adjusted up or down by 1379 process.

- 11.5.C.4 The Contractor will remove, identify, and keep all docking plugs that have been removed from the vessel.
- 11.5.C.5 Lost or damaged plugs will be replaced by the Contractor at the Contractor's expense.
- 11.5.C.6 The Contractor will open all tanks and ventilate the tanks and will have a marine chemist or other qualified person certify each tank safe to enter or safe for hot work as required, prior to the start of the cleaning operation.
- 11.5.C.7 Upon completion of the cleaning the Contractor will close up all tanks using new 1/8 inch fiber reinforced neoprene gaskets suitable for sea water service on all man-hole covers.
- 11.5.C.8 The Contractor will install all docking plugs using Contractor supplied rubber gaskets and will harden these up in the presence of the TA.
- 11.5.C.9 Engine room bilge must be cleaned with the removal of all oily water from within. The Contractor must bid on removing 1,000 liters of oily bilge water from this location; to be adjusted up or down by 1379 process.
- 11.5.C.10 All sludge and debris from the tanks will be disposed of ashore in accordance with Federal, Provincial and Municipal regulations in effect.

**11.5.D Proof of Performance**

- 11.5.D.1 The Contractor will allow the TA the opportunity to examine all tank internals prior to closing each tank.

**11.5.E Deliverables**

- 11.5.E.1 The Contractor will provide all sewage and waste disposal certificates to the TA prior to the close of the contract.
- 11.5.E.2 The Contractor will provide all tank entry certificates to the TA prior to the close of the contract.
- 11.5.E.3 This report shall be included in the Data Book reference section G 1.13.

## **12.0 PROPULSION AND MANUEVERING**

### **12.1 STARBOARD MAIN ENGINE #4 REMOVAL AND REPLACEMENT**

#### **12.1.A Identification**

- 12.1.A.1 The Contractor must remove Main Engine #4 block and crankshaft. The engine is located furthest outboard on starboard side.
- 12.1.A.2 The installed block is damaged and must be removed and renewed.
- 12.1.A.3 The engine is a Wartsila VASA 12V22 rated at 1590 kW, similar to other 3 main engines.
- 12.1.A.4 Once removed the contractor must install a new Wartsila VASA 12V22 block and crankshaft provided as GSM. Main engine #4 is located approximately 4047mm off centerline to starboard side between frames 20 and 24.
- 12.1.A.5 Contractor is responsible for the removal and reinstallation of all piping, ventilation ducting, structural components, lighting, brackets, fire suppression systems and all other systems that are located in the removal and installation path of the engine.

#### **12.1.B References**

##### Documents

161-201-100	Profile and decks
161-201-101	Tank top and flat plan
161-201-102 Sheet 1 of 2	Longitudinal Bulkheads 0 to FR 32
161-201-102	Main Deck Girders & Longitudinals FR 0-32
161-202-20	Structural Section FR 20
161-202-21	Structural Section FR 21
161-202-22	Structural Section FR 22
161-202-23	Structural Section FR 23
161-260-1	Main Engine and Gear Boxes Foundations
161-300-001	General arrangement
S030-Engine overhaul- 01	Engine removal and replacement (5 sheets)
161-500-100	Machinery Arrangement
161-625-3	Engine Room Lighting Layout
161-702-001	Vent and Sounding Diagrammatic
161-703-001	Fuel Oil Piping Diagrammatic
161-709-001	Compressed Air Piping Diagrammatic

161-713-100	Exhaust Uptakes and Fire Monitor Piping
161-800-001	Thermal Fluid Heater Diagrammatic
161-807-001	Domestic Fresh Water Piping
LI-4354228-01 Sheets 1-2-9 & 11	Kidd Marine FM-200 System Layout and Installation
Ventec 81066-1433- CD3	Ductwork Sys. – Below Main Deck & Thruster Compartment
Reference Doc#1	Wartsila Engine Installation Data
Reference Doc#2	Wartsila Component Weights
Reference Doc#3	Chockfast Pad Dimension Information
Reference Doc#4	Info from Chockfast for Fitted Bolts
Reference Doc#5	Risley Chock Calcs Main Engine rev.2
Reference Doc#6	Vulkan-Ratio S Coupling M-E Series 2200
Reference Doc#7	Wartsilla VASA Manual
Reference Doc#8	Wartsila Ops&Maint Manual
Reference Doc#9	Flywheel Details

### 12.1.B.1 Regulations

C.S.A., Hull and Machinery Regulations;

IASCS, Document No.47; Shipbuilding and Repair Quality Standard

### **12.1.C Statement of Work**

#### **General**

12.1.C.1 The contractor is responsible for all aspects of the removal and installation of ME#4 including engine rebuild, commissioning and performance trials. All manufacturer's recommendations and requirements must be followed for each stage of the removal and installation.

12.1.C.2 The Contractor must hire Wartsila FSR to complete the following work;

- Oversee existing engine removal.
- Inspect new engine upon delivery to shipyard.
- Remove and reinstall flywheel on new engine.
- Balance and add counterweights to new crankshaft.
- Install new engine in engine room.
- Reconnect all piping, electrical, controls and exhaust connections to existing systems.

- Complete rebuild of the new engine.
  - Complete connection of driveline from engine to gearbox.
  - Commission engine.
- 12.1.C.3 The Contractor must submit CWB stamped welding specifications and weld procedure data sheets to ABS where required. Weld procedures for joining pipe connections must be recorded and approved by CWB in accordance with ASME, Section IX.
- 12.1.C.4 The new engine block provided by CCG is class approved and comes with manufacturer's warranty. This documentation can be provided to the contractor upon request once engine has been delivered to contractor's facility.
- 12.1.C.5 Any parts required during the rebuild and installation of the new engine block outside the parts provided in the GSM list for this specification must be new, not reconditioned. These parts must be defined in a list and provided to TA for acceptance prior to rebuild. All parts must be purchased from the engine manufacturer. All new parts must carry manufacturer's warranties.
- 12.1.C.6 Upon receiving the vessel the contractor must note the damaged ME#4 engine will be stripped of most auxiliary equipment and partially ready for removal.
- 12.1.C.7 The Contractor must coordinate with Wartsila FSR's to ensure all required components that will be re-used on the new block have been removed and the old engine block is free to be removed.
- 12.1.C.8 The Contractor must coordinate with Wartsila FSR's to determine what work will require yard assistance and what will be the responsibility of the on site Wartsila team.
- 12.1.C.9 The Coast Guard will not provide any labour for the removal and installation of the new engine.
- 12.1.C.10 The Contractor/Wartsila must be prepared to perform the following:
- Disconnection/reconnection of all sea water piping.
  - Disconnection/reconnection of all electrical and electronic monitoring devices and sensors.
  - Disconnection/reconnection of engine components that must be exchanged onto the new block: (including but not limited to) Oil Sump, Front cover plates, Flywheel, Side covers, End covers, Studs, Bolts and Plugs, Sensor Lines, Drain Lines, Fuel, Oil and Water Piping, Combustion Air Space, Shaft Coupling, Oil



Filter Housing, Fuel Filter Housing, Fuel Racks and Control Systems, Gearing, Fitted bolts, Brackets and Hold Down bolts.

- Any other assemblies that are required for the completion of the new engine install and commissioning.

- 12.1.C.11 It is the contractor's responsibility to provide all tools and supplies to complete the work required. No tools or supplies must be used from the ships inventory without specific approval by the TA. All tools that require calibration certificates must be provided by the Contractor.
- 12.1.C.12 Care must be taken while installing and rebuilding the new engine that no debris enters the engine. This must include cleaning of crank case of all debris prior to installing on new engine block, covering and protecting top end of engine block during installation, welding and reinstallation of both piping, deck plate and lifting beams.
- 12.1.C.13 Any problems resulting from debris entering the new engine must be repaired at contractor's expense.
- 12.1.C.14 Several components must be removed and reinstalled once the new engine block is in place. While these parts are removed the contractor must store them in a secure, dry environment and protect each item from developing flash rust/corrosion.
- 12.1.C.15 Pipes that are removed must be temporarily capped to prevent debris entering the system once reinstalled.
- 12.1.C.16 Any damage to parts temporarily removed must be repair or replaced at contractors expense.
- 12.1.C.17 The contractor must allow for 50 hours machining/welding to be used for repairs found required as components are removed from the old engine for exchange. An example is chaffed piping in way of a bracket.

### **Lifting**

- 12.1.C.18 All lifting procedures must be carried out in accordance with all industrial regulations for the region. Lifting appliances must have safe working loads (SWL) above all intended lifts. Only certified lifting gear with SWL within lifting tolerances must be used. Any off-axis lifting must consider all vector loads and lifting appliances designed to withstand these loads.
- 12.1.C.19 A lifting plan must be provided to the TA prior to work being completed.
- 12.1.C.20 All temporary lifting lugs must be removed prior to contract end.

- 12.1.C.21 All lifting lug designs and calculation must be provided to TA prior to install. CCG has developed a lifting arrangement for guidance only. Please reference (Ref DWG S030 -01).
- 12.1.C.22 All loose or rotating parts within both new and existing engines must be secured prior to lifting.

**Piping (required for engine removal)**

- 12.1.C.23 All pipes and piping systems broken during the engine block removal and install must be broken at the most convenient pipe joint unless defined within this document.
- 12.1.C.24 Pipe system removal must be kept to a minimum while providing a safe, clear working space for removing and installing the engine block with minimal risk of damage to surrounding systems.
- 12.1.C.25 All broken pipe systems must be capped at both ends to prevent debris from entering. Pipes that are removed must be stored in a clean and dry environment protected from damage.
- 12.1.C.26 Any pipes damaged during the removal, storing and reinstallation must be replaced with new at the contractor's expense.
- 12.1.C.27 All pipes must be proven clear prior to reinstallation.
- 12.1.C.28 The Fuel Manifold vent piping will require cutting to remove. This piping will need to be reconnected by welding. The Contractor must take appropriate measures for Hot Work and prove the final welding to be leak free.
- 12.1.C.29 The FM 200 system has a large 3" pipe fitted with a non union type coupling. This pipe will require cutting the coupling to remove. The contractor must replace the coupling with a union during re-installation of the pipe.
- 12.1.C.30 Several pipes must be removed for the Water Tight Door system. The contractor must drain the system as required and contain any oils from the piping as they are removed. Piping must be re-installed only after being cleaned and free of any debris. The Contractor must re-fill the hydraulic system and bleed any air remaining. The Water Tight door system must be proven operational following piping installation.

**Storage**

- 12.1.C.31 All temporarily removed parts and equipment must be protected against flash corrosion, protected from debris and stored in a dry, secure area in accordance with section G 1.24.

**Joints, Connections and Hangers**

- 12.1.C.32 All removed pipe work must be reinstalled in the original configuration. Any gaskets, flanges and connectors damaged during removal must be replaced with new by contractor at contractor's expense.
- 12.1.C.33 All pipe hangers removed during the engine work must be reinstalled in original position and provide adequate support and protection to piping system. The contractor must replace any isolating rubber during the reinstallation of the hangers.

**Pipe Labeling**

- 12.1.C.34 All piping systems must be identified in accordance with CCG Piping Identification Standard CGFM 308.00.03.

**Painting**

- 12.1.C.35 All zones affected by the work must be painted. All paint will be provided as GSM. One (1) primer coat must be applied followed by two (2) top coats. One (1) stripe coat must be applied on all welds, edges, across holes etc. before the application of the primer coats well as before the application of the first finish coat.
- 12.1.C.36 All painting applications must be carried out in accordance with paint manufacturer's specifications.

**Removal**

- 12.1.C.37 The contractor must use the engine manufacturer's Field Service Representatives (FSR) to oversee/participate in all aspects of the existing engine block and crankshaft removal.

**Deck Cut-out**

- 12.1.C.38 The contractor must cut an access hole in the aft working deck between frame 20 and frame 22. This access hole must be cut in accordance with drawing S030-Engine overhaul-01.
- 12.1.C.39 During this procedure the STBD outside stairway access to the boat deck must be removed by the contractor.
- 12.1.C.40 The contractor must reinstall the stairway to original position and condition once access hole is sealed. Any damage to the stairway must be repaired at contractor's expense. The Contractor can use the Port Stairway as an example of the modifications required.

- 12.1.C.41 Temporary barricades must be installed IWO stairways and the access hole. These barricades must be removed prior to end of contract.
- 12.1.C.42 The opening must be protected from water ingress in the event of poor weather conditions. The access opening will result in a flat surface where rain water and other water flow may result in flooding into the engine room. A suitable cowling around the perimeter of the access hole must be installed if the access is to remain open.
- 12.1.C.43 The deck penetrations in way of the cut-out (Fuel oil header Vent STBD, #3 water ballast tank vent STBD, fresh water fill STBD, Aft Sea Chest vent) must be disconnected at the nearest possible pipe joint and removed with the deck plate keeping the watertight penetrations intact.
- 12.1.C.44 The large longitudinal deck girder located at 2940 mm off centerline must be cut IWO the access hole.
- 12.1.C.45 Section of deck plate removed with girder and pipe penetrations must be stored by contractor in accordance with section 12.1.C.37 and reused to seal deck once engine work is complete.
- 12.1.C.46 Once engine reinstallation is complete the contractor must seal the deck access hole in accordance with drawing S030-Engine Ohaul-01 to original condition. It is highly recommended that the Contractor coordinate efforts with the engine installation team to close up the access as soon as practical after the engine block has been installed and the access is no longer required.
- 12.1.C.47 Contractor must arrange for ABS inspection of work and witness a hose test to verify water tightness prior to painting welds.
- 12.1.C.48 All tests and inspections of this repair must be define by contractor and submitted to TA for approval prior to completion. All painting to be done in accordance with section 12.1.C.35 - 12.1.C.36.

#### **Main Engine #4**

- 12.1.C.49 A new Wartsila VASA 12V22 block and crankshaft will be supplied as GSM. The dimensions and weight of the engine assembly are as follows;

Total Assembly Weight: 8573.2 KG

Short Block Ass. Height: 1.255 m

Short Block Ass. Width: 1.350 m

**Short Block Ass. Length: 2.845 m**

- 12.1.C.50 Please refer to Wartsila dimensional drawing Ref. Dwg#3 for guidance.
- 12.1.C.51 For further technical information concerning the engine block and installation please contact Wartsila Canada. Lifting lugs are shipped with the new block for lifting.
- 12.1.C.52 These lugs can be removed and installed on old block to help facilitate removal.
- 12.1.C.53 These lugs must be returned to CCG at contract end as they are the property of Wartsila and must be returned to Wartsila in Finland.
- 12.1.C.54 Contractor is liable for any costs incurred by CCG if the lifting lugs are lost, stolen or damaged.

**Existing ME#4 Removal**

- 12.1.C.55 All work with respect to the ME#4 removal must be done in the witness of or using Wartsila Canada certified FSR's as defined in this specification.
- 12.1.C.56 Contractor must install the Wartsila provided lifting lugs onto the existing block.
- 12.1.C.57 Deck access hole allows for a shore side crane to lift almost directly over the centre of the engine in ME#4 position. Any small adjustments must be made using other lifting equipment.
- 12.1.C.58 Current engine position must be marked by the contractor on the engine beds at all four corners prior to removal of the engine block.
- 12.1.C.59 The jacking screws located on the four corners of the engine must be removed and installed on the new block.
- 12.1.C.60 Existing engine block and crank must be prepared by contractor for shipping to CCG's facility. This must include temporary shipping seating and tie-downs to secure equipment and shrink wrapped to avoid water accessing engine parts.
- 12.1.C.61 Any damage caused to engine and crankshaft due to improper shipping preparation must be paid at contractor's expense. CCG will pick up existing engine and crank from the contractor facility prior to end of contract.
- 12.1.C.62 The existing Oil Sump (Wartsila part number 100 300) must remain in place once the block is removed. It is advised that the Contractor coordinate with the Wartsila FSR's regarding storage, removal and temporary placement of engine components that will be removed from the existing #4 block for re-use on the new block. Space is limited in the engine room for these parts.

**Cleaning of Area IWO Engine Block**

- 12.1.C.63 Once the existing block is removed the Oil Sump must be cleaned of all debris, oil and residue.
- 12.1.C.64 The bilge beneath the Oil Sump must be cleaned and removed of all oily residue and debris prior to the new block being installed. The Oil Sump must be lifted clear in order to perform this task properly.
- 12.1.C.65 The engine beds must be cleaned and all old chocking material and paint removed.
- 12.1.C.66 Engine beds must be buffed down to bare metal in accordance with Chock Fast recommendation.
- 12.1.C.67 Once bilge and engine beds are cleaned the contractor must have the TA inspect the area and approve prior to repositioning the crank case and installing the new block.
- 12.1.C.68 All removed material must be disposed of in accordance with all Federal, Provincial and Municipal laws and regulations.

**Engine Beds**

- 12.1.C.69 The contractor must use drawing 161-260-1 and Ref. Dwg #2 for guidance. Alignment plates must be welding to the engine beds at all four corners (Ref. Pic #10) using the marks provided prior to the engine removal as guidance.
- 12.1.C.70 Once final alignment and engine fastening, these alignment plates must be removed.
- 12.1.C.71 To bed the engine the contractor must use Chock Fast provided by Philadelphia Resins.
- 12.1.C.72 The contractor must provide an updated Chock Fast Pad dimensions drawing (Ref #3) and Chock calculations (Ref #4).
- 12.1.C.73 All chocking must be completed in accordance with manufacturer's recommendations, ABS and Wartsila requirements.
- 12.1.C.74 Once chock fast has cured 4 samples must be taken at predetermined location to ensure proper curing before the engine is bolted down to final torque.

**New Block and Crankshaft Installation**

- 12.1.C.75 The Contractor must use Wartsila technicians to complete all work required with the installation of the new engine.

- 12.1.C.76 The new block and crankshaft must be unpacked from its shipping crate and inspected by Wartsila prior to installation.
- 12.1.C.77 Contractor must use the Wartsila provided lifting lugs (Ref. Doc #1) to lift the engine assembly.
- 12.1.C.78 Using a shore side crane the contractor must lower the new engine block and crankshaft into the engine room space, (Ref Dwg S030-engine ohaul-01).
- 12.1.C.79 All installation details must be in accordance with manufacturer's recommendations and completed by a Wartsila FSR to ensure proper installation.
- 12.1.C.80 Any damaged noted after Contractor has received the new engine shall be repaired at Contractor cost.

#### **Engine Alignment**

- 12.1.C.81 The engine must be aligned using the alignment plates and jacking screws installed on the engine.
- 12.1.C.82 Alignment must be done under the supervision of Wartsila, ABS and the TA in accordance with the requirements for the Vulkan – Ratio S Coupling (Ref Doc #6).
- 12.1.C.83 The existing Vulkan coupling and flywheel must remain and be used to connect the engine to the gearbox.
- 12.1.C.84 All Alignment must be completed using laser measurement devices or other standard marine industry practices as approved by TA and ABS.

#### **Crankshaft, Counterweights and Flywheel**

- 12.1.C.85 It is expected that the new engine block and crankshaft assemblies will come complete as a short block assembly.
- 12.1.C.86 The contractor must have Wartsila FSR fit the existing flywheel to the new crankshaft prior to installation into the new block. (Ref Doc 9).
- 12.1.C.87 The existing flywheel will be reused and therefore needs to be removed from the existing crankshaft. The flange of the crankshaft comes with threaded holes that will require precision boring and reaming. This fitting process must be completed to ensure proper operation of the engine and driveline and must be done before the new engine block is installed in the engine room and the entire fitting process must be completed by a Wartsila FSR.

- 12.1.C.88 Wartsila FSR to use custom fitted bolts supplied as GSM to connect the crankshaft to the flywheel.
- 12.1.C.89 Once flywheel is fitted the crankshaft and flywheel assembly must be balanced by Wartsila FSR and correct counter weights attached to the crankshaft in accordance with Wartsila recommendations.
- 12.1.C.90 Once engine is aligned and installed the contractor must have Wartsila FSR connect the flywheel to the crankshaft and then connect the flywheel to the Vulkan coupling to complete the driveline assembly. Pictures of crank and flywheel assembly from previous crankshaft renewal on board the CCGS Samuel Risley are provided for guidance (Ref Pic #11-14).

#### **Engine Bolting and Chocking**

- 12.1.C.91 The engine must be bolted to the engine beds using bolts fitted using chock fast in accordance with document Ref.4. Drawings of the fitted bolts must be submitted to the TA for acceptance.
- 12.1.C.92 Chock fast must be poured by qualified technician and final torqueing of the bolts must be in accordance with Wartsila and Chock fast installation requirements.
- 12.1.C.93 Any coffer dams or moulds used during the pouring of the chock fast must be removed upon completion.

#### **Engine Rebuild**

- 12.1.C.94 The contractor must contract Wartsila Canada certified FSR's to complete the engine rebuild and connection of driveline.
- 12.1.C.95 The Wartsila technicians must utilize all GSM supplied equipment as defined in the GSM list to rebuild the engine.
- 12.1.C.96 All GSM parts provided must be new or reconditioned and measured with manufacturer's tolerances.
- 12.1.C.97 Any additional equipment outside of the equipment provided by CCG must be defined in a list prior to the rebuild and submitted to the TA for approval.
- 12.1.C.98 During the rebuild the contractor must ensure access to the area for the TA and ABS to carry out inspections.
- 12.1.C.99 All work carried out must be in accordance with manufacturer's specifications as well as to the TA's satisfaction.



- 12.1.C.100 Wartsila is responsible for all electrical, controls, piping and mechanical reconnections to the vessels existing systems.
- 12.1.C.101 The contractor must flush all systems to avoid debris damaging the system. Flush must be completed under Wartsila FSR supervision and to manufacturer's recommendations.
- 12.1.C.102 All operating fluids must be supplied and installed by contractor under supervision of Wartsila FSR to manufacturer's specifications.
- 12.1.C.103 Any temporary lifting lugs must be removed prior to contract end.

#### **Ventilation Duct Work**

- 12.1.C.104 Located between frame 20 and 22 running transversely are the air supply ducts for ME#3 and ME#4 (Ref Pic#1) and Engine Room Supply. These ducts must be dismantled and stored in a suitable location by the contractor in accordance with section 12.1.C.37.
- 12.1.C.105 These ducts must be disconnected at the most convenient flange to provide a clear removal/access path for the engine block.
- 12.1.C.106 Once engine removal/install is complete the ducting must be reconnected.

#### **Thermal Heating Pipes**

- 12.1.C.107 The thermal pipes noted in Ref. Pic#2-8, that run longitudinally along the longitudinal girder 2940mm off centerline and cross transversely at frame 21/22 must be drained and broken outside of the deck access opening.
- 12.1.C.108 The pipes are connected using threaded couplings and must be removed IWO the engine block removal/access path.
- 12.1.C.109 All piping must be reinstalled and returned to fully operational prior to contract completion.

#### **Sea bay Vent**

- 12.1.C.110 The sea bay vent pipe must be disconnected at the closest Victaulic coupling and the deck penetration must be removed with the deck cut-out. Details of the penetration can be reviewed in Ref. Pic#2-8.
- 12.1.C.111 Additional sections of the vent pipes must be removed to the closest coupling as required to avoid the engine removal/access path.

- 12.1.C.112 All piping must be reinstalled and returned to fully operational prior to contract completion.

#### **Fresh Water Fill**

- 12.1.C.113 The fresh water fill pipe must be disconnected at the closest Victaulic coupling or union and the deck penetration must be removed with the deck cut-out. Details of the penetration can be reviewed in Ref. Pic#2-8.
- 12.1.C.114 Additional sections of the vent pipes must be removed to the closest coupling as required to avoid the engine removal/access path.
- 12.1.C.115 Great care must be taken to cap this system to avoid debris and contamination entering the system.
- 12.1.C.116 All piping must be reinstalled and returned to fully operational prior to contract completion.
- 12.1.C.117 Once the system is reinstalled the contractor must preform a super-chlorination test on the system as per section G 1.29.

#### **Fuel Header Tank Vent Pipe**

- 12.1.C.118 The fuel header tank vent pipe must be disconnected and a portion removed as detailed in Ref. Pic#2-8.
- 12.1.C.119 This pipe is connected by welded pipe connections and can be removed at the closest weld to avoid the engine removal/access path.
- 12.1.C.120 All piping must be reinstalled and returned to fully operational prior to contract completion.

#### **FM200 Fire Suppression System**

- 12.1.C.121 The contractor must contact Troy Fire and Safety FSR to advise them the Contractor will disconnect and remove the portion of FM200 suppression system IWO the engine removal/access path.
- 12.1.C.122 The Contractor must request Troy FSR isolate this portion of the fire suppression system including all alarms, discharge pipes etc.
- 12.1.C.123 Once engine work is completed the contractor must hire Troy FSR to reinstall, inspect and test the portion of the fire suppression system, reinstate all alarms and re-certify system. Please refer to Ref. Pic#2-8 for guidance on pipe location.

**Water Tight Door Pipes**

- 12.1.C.124 The remote hydraulic connections for the water tight doors run in way of the required opening. The contractor must drain and remove the piping that is required.
- 12.1.C.125 The piping is assembled with swage type fittings and can be disassembled.
- 12.1.C.126 Upon completion of the work the Contractor must ensure the piping is clean and free of debris before re-assembly.
- 12.1.C.127 The Contractor must bleed any air from the hydraulic system and ensure the proper operation of the doors.

**Pipes to Avoid**

- 12.1.C.128 There are hydraulic lines that run transversely along frame 20 (Ref. Pic#2-8). These pipes are located aft of the intended deck cut-out. These pipes power the port deck winch and must be maintained intact throughout this work.

**Lifting Beams**

- 12.1.C.129 The lifting Rails located over ME#4 and between ME#3 and ME#4 must be removed.
- 12.1.C.130 Care must be taken to maintain these rails especially to protect the running rails.
- 12.1.C.131 These rails are required to be reinstalled prior to the building of the new ME#4 by Wartsila as they will require them to lift various components.
- 12.1.C.132 Temporary storage of these items must be in accordance with section G 1.24
- 12.1.C.133 When reinstalling the lifting beams the contractor must ensure the beams are within a maximum deviation of <2 degrees from horizontal.
- 12.1.C.134 Once lifting beams are installed a static load test must be carried out in accordance with TCMS regulations and witnessed by ABS inspectors to provide a safe working load. The lifting capacities for each beam must be maintained (SWL 3 ton).

**Electrical Trays**

- 12.1.C.135 There are two main electrical wire trays running fore and aft outboard of ME#4.
- 12.1.C.136 These trays are attached to the deck head and must remain intact throughout this work. The deck cut-out must be designed to avoid altering these wire conduits.

**Lighting**

- 12.1.C.137 The contractor must disconnect all permanent lighting IWO the engine removal/access route.
- 12.1.C.138 These permanent lights must be removed and stored in a suitable location in accordance with Section G 1.24
- 12.1.C.139 . The contractor must supply auxiliary lighting in the area surrounding ME#4 for the duration of the removal/installation process.
- 12.1.C.140 Once the new engine block is in place the ship's permanent lighting can be reinstalled and commissioned to be used during the engine rebuilding process.

#### **12.1.D Proof of Performance**

- 12.1.D.1 The Contractor must provide all new material certificates to the TA prior to installation. Certificates must also be made available to all ABS inspectors.
- 12.1.D.2 The contractor must arrange for ABS inspectors to inspect all work throughout the removal and replacement of the engine block, the rebuild of ME#4 and the commissioning of the engine.
- 12.1.D.3 Contractor must provide ABS inspection certificates for all engine systems and provide proof of operation to the satisfaction of the TA and ABS inspectors.

#### **Commissioning**

- 12.1.D.4 Commissioning of the new engine must be completed by Wartsila Canada.
- 12.1.D.5 All commissioning must be done in accordance with manufacturer's specifications.
- 12.1.D.6 The contractor must arrange ABS inspection during commissioning process.

#### **Performance Trials**

- 12.1.D.7 The contractor under the guidance of Wartsila Canada must perform a set of performance trials to ensure the engine is operating at optimum performance.
- 12.1.D.8 A trial agenda must be submitted to the TA and ABS for approval prior to the trials.
- 12.1.D.9 Any deficiencies noted during the trials must be rectified by the contractor under the guidance of Wartsila prior to acceptance by the TA.
- 12.1.D.10 Any additional work required to repair deficiencies must be completed at contractor's expense.

#### **Inspection**

- 12.1.D.11 The contractor must arrange for ABS to inspect all aspects of this engine overhaul.
- 12.1.D.12 Contractor must consult with ABS and define an inspection schedule. This schedule is to be provided to the TA for approval.
- 12.1.D.13 All documents provided by ABS must be handed over to the TA at contract end.
- 12.1.D.14 It is the contractor's responsibility to ensure all work completed is approved by ABS prior to contract completion.
- 12.1.D.15 During the ME#4 removal and installation Wartsila Canada must be involved with the inspection of equipment, lifting plan, installation, alignment and total overhaul of engine. All documents provided by Wartsila must be handed over to the TA at contract end.

#### **12.1.E Deliverables**

- 12.1.E.1 Contractor must deliver to the TA all original signed compliance reports provided by ABS with regards to this work.
- 12.1.E.2 The contractor must supply the TA with a schedule of work completed. The contractor must also provide TA with a signed certificate from the engine manufacturer stating the engine has been rebuilt within manufacturer's tolerances, operation tolerances are verified and accepted, and all warranties are accepted by manufacturer.
- 12.1.E.3 Once approved the original signed report must be submitted to the TA located within the Data book as defined in section G 1.13.
- 12.1.E.4 Copy of QA report noting all work completed, field report from Wartsila FSR, verification of all measurements and readings for engine systems and checklist of completed work must be submitted to TA within the test and trials data book.
- 12.1.E.5 The contractor must supply all manufacturer's installation manuals and documents with regards to the engine removal and install. All manuals must be provided in both Hard and electronic copies; 1 x hard copies and 2 x electronic copy.
- 12.1.E.6 Copies of all disposal certificates must be provided to the TA.
- 12.1.E.7 The Contractor is responsible for updating all "As Fitted" drawings affected by the ME#4 replacement. Three (3) hard copies as well as original CAD drawings must be provided to the TA. CAD drawing format to be ACAD 2010.dwg.

## **13.0 POWER GENERATION SYSTEMS**

### **13.1 EMERGENCY GENERATOR OVERHAUL**

#### **13.1.A Identification**

- 13.1.A.1 The Contractor must fully inspect and report on the condition of the Emergency Generator diesel onboard the CCGS Samuel Risley. The Contractor must perform a run test under full load for the attending ABS surveyor. The Contractor must obtain a TCMS survey credit for the generator. The Contractor must be a fully accredited Detroit Diesel Technician familiar with the operation, service and maintenance of the 6-71 In Line series of Detroit Diesel engine.

#### **13.1.B References**

##### 13.1.B.1 Documents

Detroit Diesel Engines In Line 71 Operators Manual 6SE329 (Rev 12/81).

Part Plate 6\_71 Samuel Risley.pdf

##### 13.1.B.2 Generator Details

The emergency generator diesel engine is of the following make and model number:

- Detroit Marine Diesel 6-71T Series
- Serial Number: 6A0439657;
- Model Number: 1063-7305;
- Unit Number: 6A0439675
- Location: Emergency Generator Room, STBD side Winch Compartment.

#### **13.1.C Statement of Work**

- 13.1.C.1 Except where specified, the Contractor must supply all parts, consumable products, hardware, tools and labor required to complete the service inspection as outlined in section 13.1.C.

- 13.1.C.2 The Contractor must make reference to the Detroit Diesel Engine Service Manual for the in-line 71 series of engines. The Manual to be referenced is 6SE329 (Rev 12/81). The Contractor must adhere to all precautions and work instructions provided within the manual in respect to the disassembly, measurements and assembly of the emergency generator diesel engine.
- 13.1.C.3 The Contractor must isolate the diesel engine from the starting air circuit and fuel circuit with an approved lock-out tag system. The generator must also be electrically isolated from the switchboard with an approved lock-out tag system as well as the electrical control circuit.
- 13.1.C.4 The Contractor must drain and dispose ashore of all fluids from the diesel engine in accordance with all Federal, Provincial and Municipal regulations in effect, as required during the Inspection and Service work. The Contractor must provide proof of disposal for this waste to the Technical Authority.
- 13.1.C.5 The Contractor must mark matching parts and must record these match marks so that parts will be assembled into their original location upon assembly of the diesel engine.
- 13.1.C.6 The Contractor must remove all fuel injectors, as required, from the diesel engine and perform a compression test on the diesel engine. The Contractor must record reading from all six cylinders for a final report.
- 13.1.C.7 The Contractor must perform the Compression Test at the applicable engine temperature and RPM for the engine arrangement fitted. The Contractor must provide the special compression testing tools required for this performance assessment.
- 13.1.C.8 Injector removal and installation is presented in Section 2 of the Operators Manual.
- 13.1.C.9 The Contractor must open up the inspection ports for all six cylinders and inspect the condition of the piston rings and the cylinders. The contractor must replace the gaskets with new prior to replacing the inspection covers.
- 13.1.C.10 The Contractor must inspect the interior of the cylinder combustion spaces and pistons using a borescope through the injector ports and exhaust ports. The borescope must be capable of taking photo or video feed back. A copy of this inspection must be included in the final report.
- 13.1.C.11 The Contractor must remove the oil pan and visually inspect the big end bearings and main bearings and oil pump. The Contractor must install a new oil pan gasket after the inspection.

- 13.1.C.12 The Contractor must inspect the diesel engine, visually, mechanically and operationally and provide Coast Guard with a Condition Assessment of the Emergency Generator Diesel Engine.
- 13.1.C.13 The Contractor must replace the 6 Fuel injectors with Coast Guard supplied injectors. The Contractor must perform a proper adjustment of the injectors as described the Service Manual.
- 13.1.C.14 The Contractor must return the old removed injectors to the Coast Guard.
- 13.1.C.15 The Contractor must replace the fuel jumpers to and from each injector with new Contractor supplied jumper lines.
- 13.1.C.16 The Contractor must perform the service work for tune up on the in line 71 series engine as applicable to the engine arrangement fitted. The guidelines for the engine service are found in Section 6 of the Operators Manual.
- 13.1.C.17 The Contractor must replace all fluids: Lube Oil and Jacket Water.
- 13.1.C.18 The Contractor must employ all new Contractor supplied gaskets when assembling the diesel engine.
- 13.1.C.19 The Contractor must use new Coast Guard supplied lube oil, fuel and air filters.
- 13.1.C.20 The Contractor must fill the engine with Coast Guard supplied glycol for the cooling water circuit and Coast Guard supplied oil for the lubricating circuit.
- 13.1.C.21 Upon completion of all service work the Contractor must run up the Emergency Generator and make any adjustments as required to establish proper function of the diesel engine.
- 13.1.C.22 All leaks and/or mechanical defects must be corrected by the Contractor prior to final contract acceptance.

#### **13.1.D Proof of Performance**

- 13.1.D.1 The Contractor must verify the operation of all alarm and monitoring equipment fitted to the diesel engine. All local gauges must be verified as providing the correct readings.
- 13.1.D.2 The Contractor must check and test all normal and emergency engine shut downs. The results of these tests must be recorded. The Contractor must perform these tests in the presence of ABS and the TA.



**13.1.E Deliverables**

- 13.1.E.1 The Contractor must present the recorded readings and measurements to the attending ABS surveyor for TCMS survey credit.
- 13.1.E.2 The Contractor must produce an assessment report on the Diesel Engine with notes on the service work provided, measurements taken, recorded readings and an overall condition of the engine. This report must be included in the test and trials data book.

**14.0 POWER DISTRIBUTION SYSTEMS****14.1 MEGGER TEST**

**14.1.A Identification**

- 14.1.A.1 The CCG has a requirement for the Contractor to perform an annual Megger test on the CCGS Samuel Risley as required by TP127E to satisfy TCMS statutory requirements.

**14.1.B References**

- 14.1.B.1 Documents  
2018 Risley Meggering Log
- 14.1.B.2 Regulations  
TP127 E – Latest Edition

**14.1.C Statement of Work**

- 14.1.C.1 The Contractor must perform thorough visual examinations and electrical insulation resistance tests of all items of machinery and equipment identified in the referenced Risley Meggering Log in order to determine the mechanical and electrical conditions of the equipment and machinery to the requirements of TP 127 E Section 34.1 and section 34.6 (a), (b).
- 14.1.C.2 Thorough visual examination must include the external condition and internal conditions where the equipment internals are accessible through doors, cover plates, terminal boxes, removable enclosures, ventilation louvers that require opening or removal to perform the electrical insulation resistance tests.
- 14.1.C.3 The Contractor must perform electrical insulation resistance tests on the machinery and equipment to the requirements of TP 127 E Section 34.6 (b). Tests must be conducted between each phase and ground, and between each phase as applicable to the machinery and equipment under test. Motor circuits must be tested from the switchboard to the motor controller and from the motor controller to the motor. General power circuits must be tested from switchboards to distribution panels and sub-circuits, and must include permanently connected equipment. The Contractor must exercise caution and disconnect all sensitive electronic equipment which may be damaged by the testing.
- 14.1.C.4 The Contractor must notify the TA of any unsatisfactory or doubtful condition discovered during the thorough visual examination before the end of the working day in which the condition is discovered. The Contractor must notify the TA of any insulation resistance test that shows a resistance below 0.1 mega-ohm before the end

of the working day in which the test is made. The repair if any will be made under a 1379 action.

14.1.C.5 The Contractor must prepare and submit a report of the electrical insulation resistance test results as an updated copy of the MS-Excel spreadsheet provided. The Contractor must add columns as required and retain the historic data. The Contractor must submit to the TA the report required in this section in the paper and electronic formats and numbers required by Section 8.5.1 within 4 days of completion of the testing and any repairs and retesting required.

14.1.C.6 The Contractor must supply in the report a detailed explanation and for any circuit or device that cannot be satisfactorily tested due to the presence of sensitive electronic components or circuits that cannot be disconnected from the device or circuit being tested.

#### **14.1.D Proof of Performance**

14.1.D.1 The CCG will provide one engineering officer familiar with the vessel to assist the Contractor with the identification of machinery and equipment. The Contractor must be responsible for the disconnection and isolation of the machinery and equipment under test and for the reconnection and setting back into service of the machinery and equipment after testing. The Contractor must demonstrate to the assisting CCG personnel the correct functioning of the machinery and equipment after testing. The Contractor must be responsible to correct and repair damage consequent to any incorrect reconnection and setting to work.

#### **14.1.E Deliverables**

14.1.E.1 The Contractor must submit the reports in electronic formats in an MS-Excel file as a new version of the file supplied, 1 copy as an open MS-Excel spreadsheet, 1 copy in PDF format on separate memory key. The new version must insert the new data into the existing spreadsheet so that old and new data can be compared.

### **14.2 BREAKER REPLACEMENT**

#### **14.2.A Identification**

14.2.A.1 The contractor must replace the current Merlin Gerin distribution breakers within the Main Switchboard Panel, Cubicle #1. The breakers will be replaced with GSM supplied breakers.

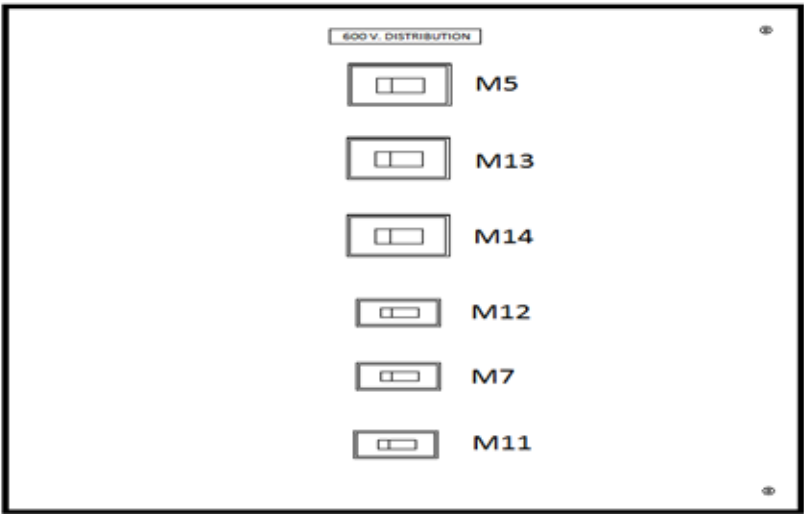
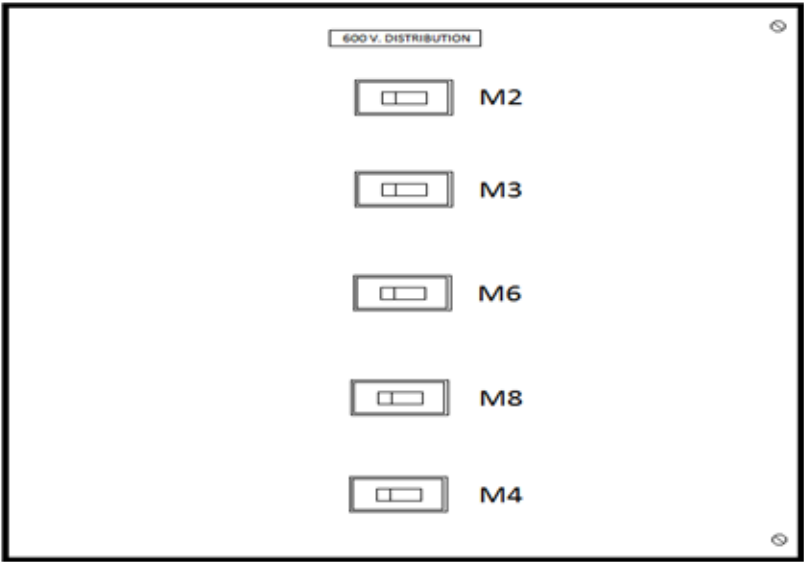
**14.2.B References****Main Distribution Breakers****MAIN SWITCHBOARD FRONT PANEL CUBICLE 1**

TAG	DESCRIPTION (AS FITTED)
M2 NON ESSENTIAL MCC NO.1 180A	CIRCUIT BREAKER, MERLIN GERIN, MOULDED CASE, MODEL C250L 3 POLE, 600V, 89 KA I.C. C/W TRIP MODEL
M3 SEMI-ESSENTIAL MCC NO.2 150A	CIRCUIT BREAKER, MERLIN GERIN, MOULDED CASE, MODEL C250L 3 POLE, 600V, 89 KA I.C. C/W TRIP MODEL
M6 SEMI-ESSENTIAL MCC NO.1 155A	CIRCUIT BREAKER, MERLIN GERIN, MOULDED CASE, MODEL C250L 3 POLE, 600V, 89 KA I.C. C/W TRIP MODEL
M8 NON-ESSENTIAL MCC NO.3 150A	CIRCUIT BREAKER, MERLIN GERIN, MOULDED CASE, MODEL C250L 3 POLE, 600V, 89 KA I.C. C/W TRIP MODEL
M4 120 VOLT SEMI-ESSENTIAL DISTRIBUTION 135A	CIRCUIT BREAKER, MERLIN GERIN, MOULDED CASE, MODEL C160L 3 POLE, 600V, 89 KA I.C. C/W TRIP MODEL

**MAIN SWITCHBOARD BACK PANEL CUBICLE 1**

TAG	DESCRIPTION (AS FITTED)
M5 240 VOLT NON ESSENTIAL DISTRIBUTION NO.1 271A	CIRCUIT BREAKER, MERLIN GERIN, MOULDED CASE, MODEL C250L 3 POLE, 600V, 89 KA I.C. C/W TRIP MODEL
M13 ESSENTIAL MCC NO.1 266A	CIRCUIT BREAKER, MERLIN GERIN, MOULDED CASE, MODEL C250L 3 POLE, 600V, 89 KA I.C. C/W TRIP MODEL
M14 ESSENTIAL MCC NO.2 268A	CIRCUIT BREAKER, MERLIN GERIN, MOULDED CASE, MODEL C250L 3 POLE, 600V, 89 KA I.C. C/W TRIP MODEL
M12 NON-ESSENTIAL MCC NO.2 150A	CIRCUIT BREAKER, MERLIN GERIN, MOULDED CASE, MODEL C250L 3 POLE, 600V, 89 KA I.C. C/W TRIP MODEL
M7 SPARE	CIRCUIT BREAKER, MERLIN GERIN, MOULDED CASE, MODEL C160L

	3 POLE, 600V, 89 KA I.C. C/W TRIP MODEL
M11 240 VOLT NONESSENTIAL DISTRIBUTION CENTRE NO.2 90A	CIRCUIT BREAKER, MERLIN GERIN, MOULDED CASE, MODEL C160L 3 POLE, 600V, 89 KA I.C. C/W TRIP MODEL



Drawings

161-603-1 CCGS Samuel Risley EL. Power One Line Schematic (9 pages)

### **Regulations**

Transport Canada TP127E – Ships Electrical Standard (Latest Version)

Canada Shipping Act – Marine Machinery Regulations (Latest Version)

IEEE 45 – Recommended Practice for Electrical Installations on Shipboard

### **14.2.C Statement of Work**

- 14.2.C.1 The contractor must isolate and lock out the 600VAC Essential MCC #1 and MCC #2 cabinets.
- 14.2.C.2 The contractor must removed the following existing breakers M2, M3, M6, M8, M4, M5, M13, M14, M12, M7, M11 from the Essential MCC #1 and MCC #2 cabinets located in the Machinery Control Room.
- 14.2.C.3 The contractor must install the new GSM supplied replacement breakers.
- 14.2.C.4 The Contractor must allow the TA and ABS inspectors to inspect the installation prior to closing the cabinet and energizing the circuit. Any deficiencies noted by the TA or ABS must be rectified by the Contractor at their own expense.
- 14.2.C.5 Any changes to the front cabinet doors to accommodate the new breakers must be completed by the Contractor.
- 14.2.C.6 The contractor must fabricate cover patches where require to close exposed gaps in the switchboard. These covers must be designed and manufacturer in accordance with TCMS regulations for electric switchboards and subject to TA' and ABS approval for fit and finish.
- 14.2.C.7 The Contractor must replace any damaged placards with suitable engraved lamazoid placards similar to existing in terms of size, font and colour. All Placards subject to TA's approval.

### **14.2.D Proof of Performance**

- 14.2.D.1 The Contractor must energize the switchboards and each individual circuit under the supervision of the TA and ABS inspector.
- 14.2.D.2 The contractor shall adjust the settings of each breaker as required and must demonstrate the operation of all breakers installed.

**14.2.E Deliverables**

- 14.2.E.1 The Contractor must complete a QA report noting the work completed in this section of the specification. All defects or repairs must be noted within this report. The report must be included in the Data book to be handed over to the TA upon completion of the contract.

**15.0 AUXILIARY SYSTEMS****15.1 REPLACEMENT OF SHIP-SIDE VALVES****15.1.A Identification**

- 15.1.A.1 Contractor must replace identified ship-side valves as detailed in this section.

**15.1.B References**

- 15.1.B.1 List of valves to be replaced, sizes and locations;

<b>Overboard Discharge Valves</b>			
Description	Type	Inch Size	Frame Location
Port S.S.G. Raw Water Discharge	S.D.N.R.	3	25-26 Port
STBD S.S.G. Raw Water Discharge	S.D.N.R.	3	25-26 Port
Main Engine Raw Water Discharge	S.D.N.R.	6	24-25 Port
Main Engine Raw Water Discharge	S.D.N.R.	6	24-25 Stbd
Bilge Pump Discharge	S.D.N.R.	4	24-25 Port
Oily Water Separator Discharge	S.D.N.R.	2	26-27 Stbd
General Service Pump Discharge	S.D.N.R.	4	24-25 Stbd

Air Conditioning Discharge	S.D.N.R.	3	26-27 Port
<b>Sea Connections</b>			
Description	Type	Inch Size	Frame Location
Recirc to Main Sea Chest	Globe	6	25-26 Port
Recirc to Main Sea Chest	Globe	6	25-26 Stbd

### **15.1.C Statement of Work**

- 15.1.C.1 The Contractor will co-ordinate the work in this Section with that of Sections 11.1 and 11.2. Where skin valves are removed and hull blasting is underway the Contractor will ensure that no blasting media or coating system overspray enter the system from which the skin valves have been removed.
- 15.1.C.2 Contractor to remove all existing valves to be replaced as detailed in section 15.1.B.1
- 15.1.C.3 Contractor to install new GSM valves in accordance with section 15.1.B.1
- 15.1.C.4 Contractors to ensure correct positioning of the valve handles, positioned same as existing valves.
- 15.1.C.5 Contractor must ensure valves are install in correct orientation to allow proper flow and operation of non-return checks.
- 15.1.C.6 Contractor must install new valves using contractor supplied gaskets and packing.
- 15.1.C.7 All installed valves to be left in their closed position.
- 15.1.C.8 Contractor to tag all new valves with correct valve name tags permanently attached to the valves similar to existing.

### **15.1.D Proof of Performance**

- 15.1.D.1 During the undocking of the vessel, the contractor will have sufficient personnel on hand such that all new valves installed within this section can be inspected for leaks.
- 15.1.D.2 Once sufficient depth has been obtained, all closed valves will be opened and verified that no bonnets or valve packings are leaking.
- 15.1.D.3 Any leaks will be rectified by contractor prior to close of the contract.
- 15.1.D.4 Contractor will demonstrate to the TA and ABS that all valves are operating as designed.



- 15.1.D.5 Contractor must include final condition report and all deficiencies noted during installation within the test and trials report.

## **15.2 PIPING STUB ENDS REPAIR**

### **15.2.A Identification**

- 15.2.A.1 The Samuel Risley has a requirement to replace piping and fittings that extend through several tanks and into tank spaces. The piping typically starts in the space (suction end) or terminates (discharge to overboard or re-circulation). The piping to be replaced is typically referred to as the stub end. The Samuel Risley will require replacing several of the stub ends identified as having wastage to the pipe wall thickness.

### **15.2.B References**

- 15.2.B.1 Drawings

<b>Drawing Number</b>	<b>Description</b>
161-702-001	VENT & SOUNDING DIAGRAMATIC
161-704-100	“AS FITTED” ENGINE ROOM BALLAST & FIRE PIPING SHEET #1 OF 2 SHEETS SHEET #2 OF 2 SHEETS
161-704-101	“AS FITTED” ENGINE ROOM BILGE PIPING
161-711-001	“AS FITTED” ENGINE COOLING PIPING DIAGRAMATIC
161-712-100	“AS FITTED” ENGINE S.W. COOLING PIPING SHEET #1 OF 3 SHEETS SHEET #2 OF 3 SHEETS SHEET#3 OF 3 SHEETS
161-712-101	“AS FITTED” ENGINE F.W. COOLING PIPING
161-809-001	“AS FITTED” SANITARY PIPING DIAGRAMATIC
161-807-3	SANITARY DRAINS (GREY WATER) AND SCUPPERS
161-808-001	SANITARY DRAIN DIAGRAMATIC
161-809-01	SANITARY DRAIN PIPING DIAGRAMATIC

**15.2.C Statement of Work**

- 15.2.C.1 Contractor must site inspect and take measurements of piping, flanges, valves and fittings to ensure the correct fit for replacement. Where there is a discrepancy between the drawings and the actual fitted materials, the actual fitted materials will be used as the standard.
- 15.2.C.2 All materials must be supplied new and in accordance with current regulations. All flanges must be ASTM stamped for approval and meet classification society standards.
- 15.2.C.3 Shop built flanges are not acceptable.
- 15.2.C.4 Ship board measurements have shown the flanges to all be Class 150 to match up with Class 150 valves.
- 15.2.C.5 All welding must be full penetration fillet with proper plate edge preparation. Welds must be pressure tested to classification standards prior to and after installation.
- 15.2.C.6 All bolts and nuts used to secure the flanges to the valve faces must be sized according to the flange bolt hole fitment requirements and be consistent. Mixing of fastener sizes is not acceptable.
- 15.2.C.7 Fasteners used to secure the flanges and pipe hangers must be coated (zinc or galvanized) to resist corrosion and anti-seize compound applied to threads prior to installing nuts. Bolts and nuts must be properly torqued and new gaskets used to seal faces.
- 15.2.C.8 The following stub ends are listed for replacement:

Stub End Description	Location	Valve Size (Inch)	Valve Type	Pipe size	Flange Diameter	Bolts	Doubler Plate thickness
#3 - Grey Water Drain Port	Frame 39-40 PORT	3	S.D. Check	3	7.5	4	1.5 x 8 OD
#5 - Grey Water Drain STBD	Frame 22-23 STBD	4	S.D. Check	4	9	9	0.5 x 6 OD
#10- Sewage Discharge	Frame 34-35 PORT	6	S.D.N.R.	6	11	8	0.5 x 11 OD
#12- Port SSG RW Discharge	Frame 25-26 PORT	3	S.D.N.R.	3	7.5	4	0.5 x 8 OD
#13- STBD SSG RW Discharge	Frame 25-26 STBD	3	S.D.N.R.	3	7.5	4	0.5 x 8 OD

#14- Main Engine RW Discharge PORT	Frame 24-25 PORT	6	S.D.N.R.	6	11	8	None
#15- Main Engine RW Discharge STBD	Frame 24-25 STBD	6	S.D.N.R.	6	11	8	None
#17-Oily water Separator Discharge	Frame 26-27 STBD	2	S.D.N.R.	2	6	4	0.5 x 6 OD
#23- Aft Port Sea Chest Vent	Frame 17-18 PORT	4	Globe	4	9	8	None
#24- Aft STBD Sea Chest Vent	Frame 17-18 STBD	4	Globe	4	9	8	None
#27- Main Sea Chest Valve Port	Frame 26-27 PORT	16	Globe	16	23.5	16	None
#28- Main Sea Chest Valve STBD	Frame 27-27 STBD	16	Globe	16	23.5	16	None
#29- Main Sea Bay Isolation Valve Port	Frame 26-27 PORT	16	Butterfly	16	23.5	16	0.5 x 24 OD
#30- Main Sea Bay Isolation Valve STBD	Frame 25-26 STBD	16	Butterfly	16	23.5	16	0.2 x 24 OD
#31- Recirc to Main Sea Chest Port	Frame 25-26 Port	6	Globe	6	11	8	None
#32- Recirc to Main Sea Chest STBD	Frame 25-26 STBD	6	Globe	6	11	8	None

- 15.2.C.9 The Stub End replacement consists of replacing the valve flange and piping from the valve flange through the bulkhead or tank top and into the tank as is the current installation for that particular stub end, or to the ship's outer bulkhead as is the current installation for that particular stub ends installation.
- 15.2.C.10 Where doubling plates have been installed the Contractor must ensure that proper doubling plates are replaced where required and reinforcement is suitably re-welded in place for all pipe lengths to mitigate vibration and provide load support.
- 15.2.C.11 All pipe ends must be terminated as per the original installation. Recirculation piping ends are typically 90° square, tank/sea bay suction lines are typically 45° mitered and the discharge piping to overboard is bell mouthed (inside weld is ground flush to the outer bell mouthed side plate).
- 15.2.C.12 Where piping passes through a tank section the piping must be increased from Schedule 40 to schedule 80 for structural support. Contractor is to reference the drawings and make reference to onsite inspection to determine the pipe size required.
- 15.2.C.13 All pipe and flange dimensions and orientation must retain existing fitment properties. Bolt hole placement must ensure valves, gaskets and mating flanges correctly align in their original positions.
- 15.2.C.14 After new installations have passed welding and performance inspections the new stub end and any disturbed coatings inside and outside bulkheads, tank tops and support systems must be coated.
- 15.2.C.15 After welding/leak testing and prior to final installation the stub end assemblies must be hot dip galvanized to ensure corrosion resistance. Where welding is to occur on the

pipe or doubling plates the Contractor must take precautions to mitigate damage to the galvanizing. Damaged to galvanization must be free of any flaking material, cleaned and cold galvanize coated upon completion.

- 15.2.C.16 Once welds have been verified and system is reconnected the system must be flushed to removed debris, grease and oils from the system. Contractor must isolate the system so as not to damage valves, gauges and other items attached to the system upstream of the piping stub end. Flushing must be carried out to the satisfaction of the TA.

#### **15.2.D Proof of Performance**

- 15.2.D.1 All stub ends must be blanked at both ends and subjected to an air pressure of 1.5 bar (2.2 psi) for 1 hour using a calibrated pressure gauge with TA and ABS in attendance.
- 15.2.D.2 Leak testing must be completed around each full penetration weld using a soupy solution to identify any weld defects.
- 15.2.D.3 All weld defects must be repair at contractor's expense and subjected to 1 hour pressure test along with leaking testing of the weld.
- 15.2.D.4 All welds to be tested and only passed when TA and ABS are satisfied with holding pressure and weld repairs.

#### **15.2.E Deliverables**

- 15.2.E.1 Contractor must provide all welding schedules to the TA and ABS prior to commencing the work.
- 15.2.E.2 Contractor must provide QA report noting all welding defects noted and repaired, all pressure test results and gauge calibration certificates. This data must be tabulated in the Data book reference section G 1.13.

### **15.3 FIRE MAIN PIPING REPLACEMENT**

#### **15.3.A Identification**

- 15.3.A.1 The Samuel Risley has a requirement to replace the existing Fire Main piping and fittings due to wastage. The piping to be replaced will extend from the Main Deck Isolation valves and extend forward throughout the vessel to the various fire stations and end back down at the suction piping of the Emergency Fire Pump in the bow thruster compartment. The new piping will be installed using Victaulic 77 series couplings.

**15.3.B**   **References****15.3.B.1**   Documents

CFN 161-704-001	Bilge and Fire Piping Diagrammatic
30-000-000-ES-TE-001	Colour Coding Standard for Piping Systems
161-300-01	General Arrangement
Fire Main Isometric PNG file	

**15.3.C**   **Statement of Work**

- 15.3.C.1 Contractor must site inspect and take measurements of piping, flanges, valves and fittings to ensure the correct fit for replacement. Where there is a discrepancy between the drawings and the actual fitted materials, the actual fitted materials will be used as the standard.
- 15.3.C.2 The Contractor will provide all technicians, rigger/millwrights rigging equipment, welders, crane and crane operator, hand, power and specialty tools required to perform the work.
- 15.3.C.3 All materials must be supplied new and in accordance with current regulations.
- 15.3.C.4 All welding must be full penetration fillet with proper plate edge preparation. All welds to meet current industry standards.
- 15.3.C.5 New Victaulic fittings and valves will be GSM. Where there is an occurrence where a fitting is missing the contractor must procure the proper Victaulic fitting.
- 15.3.C.6 All existing Brass fire station hose valves will be retained and reused.
- 15.3.C.7 There are approximately 6 welded reducing tees in the system. The contractor must include in his bid the fabrication of 6 new tees. The welded Tees must be fully hot dip galvanized.
- 15.3.C.8 The contractor will make custom piping bends to match existing piping in order to reduce the number of fittings needed.
- 15.3.C.9 The contractor must also supply and fabricate two custom 90's with flanges to join to the Emergency Fire pump discharge and suction flanges. The Flanges must be standard 150# and must be factory supply not fabricated.

## 15.3.C.10 The following fire main sections are listed for replacement:

<b>Focsile Deck</b>						
1	Focsile Fire Station to Stack Bulkhead	2" Sch 40 Pipe(inch)	32.5	90° Reducing 2" to 1-1/2" NPT	1	90° Sch40 1-1/2" NPT
		1.5" Sch 40 Pipe(inch)	10.5	2" NPT Union	1	1-1/2" Close nipple NPT
		90° Sch40 2" NPT Fitting	1	Tee Sch40 1-1/2" NPT	1	
2	Stack to Electronics Room	2" Sch 40 Pipe(inch)	238.5	45° Sch 40 2" NPT Fitting	1	
		2" Close Nipple NPT	1			
		90° Sch40 2" NPT Fitting	3			
3	Forward Bridge Deck Fire Station to Focsile Deck	2" Sch 40 Pipe(inch)	150.8			
		90° Sch40 2" NPT Fitting	3			
<b>Boat Deck</b>						
4	Forward Boat Deck Fire Station to Cleaning Locker	2" Sch 40 Pipe(inch)	48.5	45° Sch 40 2" NPT Fitting	1	2" NPT Union
		1-1/2" Sch 40 Pipe(inch)	5.25	90° Reducing 2" to 1-1/2"NPT	1	
		90° Sch40 2" NPT Fitting	1	Tee Sch40 1-1/2" NPT	1	
5	Bosun Stores to Stbd Boat Deck Alley	2" Sch 40 Pipe(inch)	374	2" to 1-1/2" NPT Reducer	1	2" NPT Union
		1-1/2" Sch 40 Pipe(inch)	42.75	90° Reducing 2" to 1-1/2" NPT	1	1-1/2" NPT Union
		90° Sch40 2" NPT Fitting	2	Tee Sch40 1-1/2" NPT	3	2" Vic. Coupling
		90° Sch40 1-1/2" NPT	8	Close Nipple 1-1/2" NPT	3	2" Vic. 90°
		2" NPT Ball Valve	2	2" Victaulic Butterfly Valve	1	
6	Bosun Store Bulkhead and Port/Stbd Fwd Focsile Ext. Fire Stations to Cleaning Locker	2" Sch 40 Pipe(inch)	412	2" Vic. Coupling	13	2" Vic. 90°
		3" Sch 40 Pipe(inch)	181.8	3" Vic. Coupling	2	3" to 2" Red. Vic. Coupling
		3" to 2" Reducing Coupling	2			
7	Boat deck Stairwell Fire Station in Stack to Deck	2" Sch 40 Pipe(inch)	62.5	2" to 1-1/2" NPT Bushing	2	90° Sch 40 2" NPT
		Tee Sch40 2" NPT	1	45° Sch 40 2" NPT Fitting	2	2" NPT Union
		2" Close nipple NPT	1			
<b>Main Deck</b>						
8	Forward Main Deck Fire Station to Mess	1-1/2" Sch 40 Pipe(inch)	6	Tee Sch40 1-1/2" NPT	1	90° Sch40 1-1/2" NPT
		2" Sch 40 Pipe(inch)	80.25	2" Vic. Coupling	3	2" Vic. 90°
		3" Sch 40 Pipe(inch)	5	3" Vic. Coupling	1	4" Vic. 45°
		4" Sch 40 Pipe(inch)	195	4" Vic. Coupling	8	4" Vic. 90°
		90° Reducing 2" to 1-1/2" NPT	1			
<b>Main Deck</b>						
9	Mess from Forward Main to Deck in Deck Workshop and Inc. Bulkhead and Stairwell Bulkhead	2" Sch 40 Pipe(inch)	131	2" Vic. Coupling	2	2-1/2" Vic. Butterfly Valve
		2-1/2" Sch 40 Pipe(inch)	149.5	2-1/2" Vic. Coupling	7	2-1/2" Vic. 90°
		4" Sch 40 Pipe(inch)	1130	4" Vic. Coupling	18	4" Vic. 45°
		4" to 2-1/2" Red. Vic. Coupling	1	4" Victaulic Butterfly Valve	1	4" Vic. 90°
		4" Victaulic Tee	1			
10	Main Deck Stairwell Fire Station to Mess Bulkhead	2" Sch 40 Pipe(inch)	58.25	2" Vic. Coupling	2	2" Vic. 90°
		1-1/2" Sch 40 Pipe(inch)	8.5	90° Sch40 1-1/2" NPT	1	45° Sch 40 2" NPT Fitting
		90° Reducing 2" to 1-1/2" NPT	1	Tee Sch40 1-1/2" NPT	1	
11	Laundrey Alley Fire Station to Incinerator Bulkhead	1-1/2" Sch 40 Pipe(inch)	3.25	90° Sch40 1-1/2" NPT	1	Tee Sch40 1-1/2" NPT
		2" Sch 40 Pipe(inch)	308.8	2" Vic. Coupling	9	2" Vic. 90°
		2-1/2" Sch 40 Pipe(inch)	139.5	90° Sch40 2" NPT Fitting	3	2" NPT Union
				2-1/2" Vic. Coupling	1	
		2-1/2" to 2" Red. Vic. Coupling	1	90° Reducing 2" to 1-1/2" NPT	1	1-1/2" Close Nipple
<b>Below Main Deck</b>						
12	Dry Stores to Bow Thruster	4" Sch 40 Pipe(inch)	456.5	4" Vic. Coupling	22	4" Vic. 90°
		4" Victaulic Check Valve	1	Custom 90° w/ Flanges to P/P	2	4" Victaulic Tee
		4" Victaulic Butterfly Valve	2	4" SDNR w/ flange	1	

## 15.3.C.11 The contractor will provide the proper tooling and expertise to roll Victaulic grooves in the new piping to manufactures recommendations and tolerances.

15.3.C.12 Piping is to be systematically removed in sections and replaced with new piping matching the dimensions of the existing piping. The contractor is responsible for the disposal of the old piping and fittings.

15.3.C.13 The Contractor must supply the following approximate lengths of Schedule 40 Galvanized Pipe and the following galvanized threaded fittings:

List of Total Pipe and Fittings Required for all sections except aft deck and engine room.				
<b>Pipe</b>				
	1-1/2" Sch 40 Galvanized Pipe		10	ft
	2" Sch 40 Galvanized Pipe		160	ft
	2-1/2" Sch 40 Galvanized Pipe		25	ft
	2-1/2" Sch 80 Galvanized Pipe		0.00	ft
	3" Sch 40 Galvanized Pipe		20	ft
	4" Sch 40 Galvanized Pipe		150	ft
<b>Threaded Fittings</b>				
	Close Nips NPT			
	1-1/2"	6		
	2"	2		
	45° NPT Sch 40 Galvanized			
	2"	5		
	90° NPT Sch 40 Galvanized			
	1-1/2"	12		
	2"	15		
	Tee NPT Sch 40 Galvanized			
	1-1/2"	8		
	2"	1		
	Unions NPT Galvanized			
	1-1/2"	2		
	2"	7		
	Other Galvanized NPT			
	2" to 1-1/2" Reducing 90°	6		
	Adaptor 2" to 1-1/2"	1		
	2" Ball Valve	2		
	2" to 1-1/2" Bushing	2		

15.3.C.14 All rolled pipe ends must be cold galvanized in way of the grooving to restore any disturbed galvanizing.`

- 15.3.C.15 The fire main piping will pass through approximately 28 bulkhead/deckhead penetrations. The contractor is responsible for cropping out the old piping and welding in the new piping.
- 15.3.C.16 All welds must be made to the satisfaction of the TA and regulatory bodies.
- 15.3.C.17 All galvanizing disturbed by the welding process will be cold galvanized to ensure proper corrosion protection.
- 15.3.C.18 The fire main will pass through various accommodation areas of the ship. The contractor is required to remove and reinstall bulkhead and deckhead Isolamin panels as required.
- 15.3.C.19 The Contractor is responsible for any damages done to the deck head or bulkhead panels.
- 15.3.C.20 The Contractor must protect any flooring or furniture in cabins that the piping passes through.
- 15.3.C.21 The contractor must clean up any mess or debris from these areas caused by the fire main removal and installation.
- 15.3.C.22 The fire main will pass through the crawlspace under the bridge. This requires the cement to be chipped away around the pipe and the new pipe will require new cement to the height of the existing floor.
- 15.3.C.23 If any piping needs to be disturbed to access the fire main piping then the disturbed piping must be reassembled in the same as found condition.
- 15.3.C.24 All piping must be properly supported with suitable brackets to withstand icebreaking conditions. All new brackets are contractor supplied and installed. All brackets must have new contractor supplied bolts, nuts and washers.
- 15.3.C.25 Any deviation from the original path of the fire main piping must be approved by TA.
- 15.3.C.26 After new installations have passed welding and performance inspections any disturbed coatings in the deckheads must be coated with 2 coats of Interprime 198 with the final coat matching the original paint color.
- 15.3.C.27 The fire main piping is to be color coded as per the Coast Guard Colour Coding Standard for piping Systems.

#### **15.3.D Proof of Performance**



- 15.3.D.1 The finished piping work will be made available for inspection by the TA and ABS inspector.
- 15.3.D.2 Prior to closing up deckheads and spaces the fire main will be subject to a pressurized water test of minimum 90 psi.
- 15.3.D.3 All joints and flanges must be leak free and witnessed by the TA.

**15.3.E Deliverables**

- 15.3.E.1 The contractor must supply a list of all materials used and the time and date of system pressure test. This data must be logged in the data booked to be handed over at completion of the contract.

## **16.0 DOMESTIC SYSTEMS**

### **16.1 CHIEF ENGINEER CABIN WASHROOM/SHOWER FLOOR**

#### **16.1.A Identification**

- 16.1.A.1 The Contractor must remove the existing coating of DEX-O-TEX epoxy flooring installed in the Chief Engineer's washroom and shower. Once removed the Contractor must install a new Dex-O-Tex epoxy floor in the washroom and shower areas.

#### **16.1.B References**

161-300-01 General Arrangement

#### **16.1.C Statement of Work**

- 16.1.C.1 The Contractor must ensure that no damage is done to existing cabinetry and prevent any airborne particulate from circulating outside the washroom space. Damages will be repaired at Contractor expense.
- 16.1.C.2 The Contractor must reuse the existing floor drain assemblies.
- 16.1.C.3 The Contractor must remove the existing top coating of Dex-O-Tex epoxy.
- 16.1.C.4 The contractor must replace the cement and steel substrate to allow for the proper adhesion of a new DEX-O-Tex coating.
- 16.1.C.5 The Contractor must use the same colour of substrate when replacing the floor. The colour must be provided to the TA for approval prior to installation.
- 16.1.C.6 The Contractor must adhere to the manufacturer's recommended application and curing schedules, including proper mixing, leveling and sub surface preparation.
- 16.1.C.7 The Contractor must ensure that all surfaces are properly cured and sealed.
- 16.1.C.8 The Contractor must refer to the flooring applications in the Senior Engineer and Chief Officers cabins for an example of a proper flooring application.
- 16.1.C.9 The Contractor must use an inlay to allow for proper surface leveling is required.
- 16.1.C.10 The Contractor must allow the TA the opportunity to witness the reinstallation of the flooring surface and obtain approval of the TA prior to final acceptance.
- 16.1.C.11 The new floor must be allowed to fully cure and the TA witness a water test to ensure the floor has proper drainage and is sealed.

**16.1.D Proof of Performance**

- 16.1.D.1 The Contractor must provide a 'coating application report' to the TA that details all of the particulars of the coating application process as completed by the Contractor. The report must include details of all environmental conditions at the time floor coatings were applied. This must include but not be limited to the dry and wet bulb temperatures, relative humidity, dew point and the times when flooring was started and stopped.
- 16.1.D.2 The Contractor must provide waste disposal certificates to the TA prior to the completion of the contract.

**16.2 BOAT DECK AND FOCSLE DECK FLOOR COVERINGS****16.2.A Identification**

- 16.2.A.1 The Contractor must remove the existing tile coverings from the passage floors on both the Boat and Focsle decks.
- 16.2.A.2 The Contractor must prepare the underlying cement and apply a new seamless vinyl floor covering.
- 16.2.A.3 The vinyl covering must be seamless Marine type approved by a TCMS approved classification society and be of similar colour, quality and thickness to the Main Deck covering.
- 16.2.A.4 The Contractor must provide vinyl colour samples and product samples for TA approval prior to installation.

**16.2.B References**

- 16.2.B.1 Drawings:

<b>Drawings #</b>	<b>Drawing Name</b>
161-300-001	GENERAL ARRANGMENT USB Folder 26.0
161-300-002	MAIN & BOAT Deck ACCOM LAYOUT
161-300-003	FOCSLE DK ACCOM & BRIDGE DK ARRANGMENT
161-320-003	FIRE FIGHTING PLAN
161-320-008	MAIN & BOAT DECK JOINER BHDS
161-320-004	FOCSLE & BRIDGE DECK JOINER BHDS
161-320-07	DECK COVER PLAN

**16.2.C Statement of Work**

- 16.2.C.1 The Contractor must remove and dispose of the existing “peel and stick” type vinyl floor tiles on the Boat and Focsle Decks.
- 16.2.C.2 The Contractor must clean and repair the existing cement sub floor and then prepare the floor for seamless vinyl according to manufacturer’s requirements.
- 16.2.C.3 The Contractor must apply the seamless vinyl as per manufacturer’s recommendations using certified and experienced installers.
- 16.2.C.4 The flooring must be protected from damage and allowed to fully cure before any worker traffic is allowed to pass. The Sub Contractor must approve the use of the floor prior to use and any damage must be repaired at the Contractors expense.
- 16.2.C.5 The Contractor must replace all vinyl base board required for the installation of the new flooring.
- 16.2.C.6 Baseboards must be Black 4” vinyl base board with similar profile to the existing.

**16.2.D Proof of Performance**

- 16.2.D.1 The Contract must supply colour and product samples to TA for approval prior to installation.
- 16.2.D.2 The Contract must provide TA with Marine type certification by a TCMS approved classification society prior to installation.
- 16.2.D.3 The Contractor must provide access to the floor to the TA for final approval.

**16.2.E Deliverables**

- 16.2.E.1 The contractor must provide all Marine type approval certificates for flooring installed.

## **17.0 DECK EQUIPMENT/SHIP SUPPORT SYSTEMS**

### **17.1 ANCHOR WINDLASS OVERHAUL**

#### **17.1.A Identification**

- 17.1.A.1 The Contractor must disassemble, overhaul and re-assemble the Anchor Windlass fitted on the bow of the Samuel Risley.
- 17.1.A.2 The Contractor must supply and re-new bearings, bushings, brake pads, pins and spindles.
- 17.1.A.3 The contractor must clean and inspect the main drive gears, hydraulic power pack, hoses and tubing connections. Hydraulic components and fittings to be overhauled and renewed as required.

#### **17.1.B References**

- 17.1.B.1 Documentation:

Westec Forward Hydraulic System and Deck Machinery

- 17.1.B.2 Drawings:

General Arrangement – CCGS Samuel Risley

Section 3 of Westec Manual – Assembly Drawings Complete with Parts List

#### **17.1.C Statement of Work**

- 17.1.C.1 The Contractor must drain and dispose of hydraulic oils and gear box oils contained in the Anchor Windlass and hydraulic supply lines (approx. 100 litres).
- 17.1.C.2 The Contractor must carefully strip down the Windlass and inspect all sleeve bearings, bushings and shafts for wear.
- 17.1.C.3 The Contractor must replace all roller ball bearings with new and replace all locking tabs and damaged jam nuts with new.
- 17.1.C.4 Where it is determined that the bushings, sleeve bearings and spacers are out of wear tolerances the Contractor must have new bushings, sleeves and/or spacers made to the correct “as new” fitted tolerances out of bearing bronze. The bearing bronze material must be selected to match the loading capabilities of the original bushings and sleeves.

- 17.1.C.5 The contractor must allow for 75 hours of machining and fitting for the replacement of the bronze fittings. Times will be adjusted through 1379 action
- 17.1.C.6 The Contractor must inspect all gearing for wear and deficiencies. Where issues with the gearing is noted the Contractor must contract a suitable reconditioning contractor that is capable of returning the gearing to original specifications.
- 17.1.C.7 The Contractor must replace any corroded hydraulic fittings, tubing and existing hydraulic hoses with new material. The hydraulic hoses must be sleeved in safety mesh. All metal hydraulic lines and fittings must be stainless steel NAD sized according to the original installation.
- 17.1.C.8 The Contractor must supply and renew the band brake shoes with new material in accordance with manufacturers recommendations.
- 17.1.C.9 The Contractor must inspect all Windlass components. The Contractor must identify all defects and proposed repairs to the TA for approval prior to commencing work. All repairs not covered in the general overhaul must be by 1379 action after consultation with the TA.

#### **17.1.D Proof of Performance**

- 17.1.D.1 The Contractor must provide a detailed report of the findings including volumes removed/returned/disposed.
- 17.1.D.2 The Contractor must provide disposal certificate for the disposed oils removed from the windlass.
- 17.1.D.3 The Contractor must coordinate the inspection of the windlass with ABS inspectors to obtain a survey credit in accordance with Transport Canada regulations.
- 17.1.D.4 The Contractor must return all scrap metals/parts to the TA.
- 17.1.D.5 The Contractor must prove operation of the windlass as per manufacturer's specs to TA and TCMS/ABS.

#### **17.1.E Deliverables**

- 17.1.E.1 The Contractor must provide a report detailing all work completed on the windlass including bearing and bushing tolerances. This report must be included in the vessels data book to be delivery upon completion of the contract.
- 17.1.E.2 The Contractor must provide all inspection certificates and credits received during this overhaul.

## **17.2 THERMAIL HEATER REPLACEMENT**

### **17.2.A Identification**

- 17.2.A.1 The Contractor must remove nine (9) thermal fluid heaters on board the vessel and replace with GSM supplied new equipment.
- 17.2.A.2 The replacement heaters are similar in size and application to the existing heaters and require minimal changes to the existing system to install.

### **17.2.B References**

#### **Drawings**

CMS30-101-PL (S30101p11)

161-624-28A & B( S30159wi 1&2)

#### **Existing Heaters to be Replaced**

##### **Engine Room Supply Air Preheater**

Existing two (2) supply air preheaters with the following specifications;

- 255 kW
- L 33" x W 48" x D 5.25" (heater core recessed in 1-5/8" from outside)
- 30 tubes, double pass with tubes enter and exit on 48" side
- 2" Manifolds
- CFM: 12920

##### **Engine Room Combustion Air Preheater**

Existing two (2) Combustion air preheaters with the following specifications;

- 140 kW
- L 33" x W 48" x D 5.25" (heater core recessed in 1-5/8" from outside)
- 20 tubes, single pass with tubes enter and exit on 33" side
- 2" Manifolds
- CFM: 12920

##### **MCR Supply Air Preheater**

Existing one (1) supply air preheaters with the following specifications;

- 12 kW
- L 12" x W 12" x D 5.25" (heater core recessed in 1-5/8" from outside)
- 2" Manifolds
- CFM: ~1000

**Engine Room & Winch Room Fan Heaters**

Existing four (4) Fan Heaters with the following specifications;

- 82 kW
- L 33.5" x W 20.5" x D 33.5"
- 2-1/2" Manifolds
- 1-1.2" Valves
- 115VAC/1-phase/60 Hz
- Existing Model# CAT.NO. V-240 RPM: 820 & CAT.NO.V-280 RPM:1100

**Regulations**

Transport Canada TP127E – Ships Electrical Standard (Latest Version)

Canada Shipping Act 2001 – Marine Machinery Regulations (Latest Version)

**17.2.C Statement of Work**

- 17.2.C.1 Contractor must electrically isolate all electrical connections and lockout circuits.
- 17.2.C.2 Contractor must isolate the glycol fluid connections on the heaters to be replaced.
- 17.2.C.3 Contractor must drain each existing unit scheduled to be replaced and dispose of the glycol fluid in accordance with Federal, Provincial and municipal laws and regulation.
- 17.2.C.4 Once each unit is electrically isolated and drained the Contractor must remove the units from the ventilation system. Removed units must be returned to CCG prior to contract completion.
- 17.2.C.5 The Contractor must install the new GSM supplied thermal heaters in place of the existing heaters using new mounting hardware.
- 17.2.C.6 All mounting hardware must be in accordance with manufacturer's recommendations unless the existing hardware surpasses the manufacturer's specifications in which case the higher specified hardware must be used.
- 17.2.C.7 All new mounting hardware must be provided by the contractor.
- 17.2.C.8 The installation of the new thermal heaters must be in accordance with the manufacturer's installation manual.
- 17.2.C.9 Once installed each heater must be connected to the thermal fluid glycol system and electrical systems as per manufacturer's recommendations.



17.2.C.10 Once all heaters are re-connected to thermal fluid system the fluid header tank must be returned to normal operating levels. The Contractor is responsible for providing all new thermal fluid liquid as well as installing the fluid in the header tank.

17.2.C.11 Once all systems are reconnected the Contractor must commission each heater to ensure full operation.

#### **17.2.D Proof of Performance**

17.2.D.1 The Contractor must allow the TA and ABS inspector availability to inspect the installation during all phases of installation.

17.2.D.2 The Contractor must preform a leak test to ensure all fluid connections are free of leaks. Any deficiencies noted must be repaired at contractor's expense.

17.2.D.3 The Contractor must provide proof of operation for each thermal fluid heater. Any deficiencies must be repaired by the Contractor at their own expense.

#### **17.2.E Deliverables**

17.2.E.1 The contractor must provide data sheets on the thermal fluid installed in the system.

17.2.E.2 The Contractor must provide removed heater units to CCG for disposal.

### **17.3 HVAC AXIAL FAN REPLACEMENT**

#### **17.3.A Identification**

17.3.A.1 The Contractor must remove 18 existing axial fans located onboard the vessel and replace with GSM supplied fans.

17.3.A.2 GSM supplied fans are similar in shape and size to the existing fans with minimal alterations required to existing ducting systems.

#### **17.3.B References**

##### **Drawings**

81066-1433 Sh.1,2 &3 (S30181hv1,2 &3)

CMS30-181-HV

CMS30-182-MI

CMS30-183-HV

CMS30-186-WI (2 pages)

### **Regulations**

Transport Canada TP127E – Ships Electrical Standard (Latest Version)

Canada Shipping Act 2001- Marine Machinery Regulations (Latest Version)

IEEE 45 – Recommended Practice for Electrical Installations on Shipboard

### **Existing Equipment to Replace**

#### **Engine Room Supply**

Existing two (2) supply air fans with the following specifications;

- Myson Model # 30G4/8
- Length of tube; 9”
- Diameter of tube OD; 30”
- Flange Diameter OD; 34.25”
- 2 Speed control
- Voltage; 575 VAC / 3 phase / 60 Hz
- Amperage 8.5/1.6
- Break HP; 7.78/0.97
- CFM: 12920 (HI)

#### **Engine Room Exhaust Fans**

Existing two (2) Exhaust Fans with the following specifications;

- Myson Model # 30 1/3 4P/8
- Length of tube; 9”
- Diameter of tube OD; 30”
- Flange Diameter OD; 34.25”
- 2 Speed control
- Voltage; 575 VAC / 3 phase / 60 Hz
- Amperage; 4.3/2.0
- Break HP; 2.4/0.33
- CFM: 12920 (HI)

#### **ME Supply Fans**

Existing two (2) Supply Fans with the following specifications;

- Myson Model # 30G.4P/8P
- Length of tube; 26.0625”
- Diameter of tube OD; 30”
- Flange Diameter OD; 34.25”

- 2 Speed control
- Voltage; 575 VAC / 3 phase / 60 Hz
- Amperage; 7.8/1.6
- Break HP; 7.14/0.89
- CFM: 12920 (HI)

**Main Deck Supply Fan**

Existing one (1) Supply Fans with the following specifications;

- Myson Model # 194P8P
- Length of tube; 15"
- Diameter of tube OD; 19"
- Flange Diameter OD; 22.5"
- 2 Speed control
- Voltage; 575 VAC / 3 phase / 60 Hz
- Amperage; 2.05/0.5
- Break HP; 1.0/0.13
- CFM: 2683 (HI)

**Boat Deck Supply Fan**

Existing one (1) Supply Fans with the following specifications;

- Myson Model # 194P8P
- Length of tube; 15"
- Diameter of tube OD; 19"
- Flange Diameter OD; 22.5"
- 2 Speed control
- Voltage; 575VAC / 3 phase / 60 Hz
- Amperage; 2.05/0.5
- Break HP; 0.62/0.08
- CFM: 2683 (HI)

**Emergency Gen Supply Fan**

Existing one (1) Supply Fans with the following specifications;

- Myson Model # 194P8P
- Length of tube; 15"
- Diameter of tube OD; 19"
- Flange Diameter OD; 22.5"
- 1 Speed control
- Voltage; 575 VAC / 3 phase / 60 Hz
- Amperage; 2.05
- Break HP; 0.62
- CFM: 2683 (HI)

**Focsle Deck Supply Fan**

Existing one (1) Supply Fans with the following specifications;

- Myson Model # 15GV4/8P
- Length of tube; 15"
- Diameter of tube OD; 15"
- Flange Diameter OD; 17.8"
- 2 Speed control
- Voltage; 575 VAC / 3 phase / 60 Hz
- Amperage; 1.2/0.32
- Break HP; 0.22/0.03
- CFM: 1600 (HI)

**Galley Exhaust Fan**

Existing one (1) Exhaust Fans with the following specifications;

- Myson Model # 15GVP
- Length of tube; 15"
- Diameter of tube OD; 15"
- Flange Diameter OD; 17.8"
- 1 Speed control
- Voltage; 575 VAC / 3 phase / 60 Hz
- Amperage; 2.35
- Break HP; 1.34
- CFM: 2125 (HI)

**Deck Workshop Supply Fan**

Existing two (2) Supply Fans contra rotating in series with the following specifications;

- Myson Model # 15G4P
- Length of tube; 15" each section and 30" total length
- Diameter of tube OD; 12.25"
- Flange Diameter OD; 14.8"
- Tandem Speed
- Voltage; 120 VAC / 1 phase / 60 Hz
- Amperage; 4.0
- Break HP; 0.05
- CFM: 1234 (HI) (Both Stages Combined)

**MCR Supply Fan**

Existing one (1) Supply Fans with the following specifications;

- Model # -
- Length of tube; 26"
- Diameter of tube OD; 12.25"
- Flange Diameter OD; 14.8"
- 1 Speed control
- Voltage; 120 VAC / 1 phase / 60 Hz

- Amperage; 7.5
- Break HP; 0.5
- CFM: 1000 (HI)

#### **Toilet Exhaust Fan**

Existing two (2) Exhaust Fans contra rotating in series with the following specifications;

- Myson Model # 194P8P
- Length of tube; 15" each and 30" total length
- Diameter of tube OD; 19"
- Flange Diameter OD; 22.5"
- 2 Speed control
- Voltage; 575 VAC / 3 phase / 60 Hz
- Amperage; 2.05/0.58 (combined)
- Break HP; 1.0/0.13 (combined)
- CFM: 3288 (HI combined)

#### **Dry Stores Supply Fan**

Existing two (2) Supply Fans contra rotating combined with the following specifications;

- Myson Model # 12G2.4P
- Length of tube; 15" each and 30" combined
- Diameter of tube OD; 12"
- Flange Diameter OD; 14.8"
- 1 Speed control
- Voltage; 115 VAC / 1 phase / 60 Hz
- Amperage; 4.0 (combined)
- Break HP; 0.16 (combined)
- CFM: 1236 (HI combined)

### **17.3.C Statement of Work**

- 17.3.C.1 The Contractor must electrically isolate each fan to be replaced and lock-out.
- 17.3.C.2 The Contractor must remove each of the existing fans noted in section **Error! Reference source not found..**
- 17.3.C.3 The contractor must drill each new fan flange to match the existing ductwork flanges. New GSM supplied fans are equipped with blank flanges.
- 17.3.C.4 The Contractor must install each new fan provided. New fans are of similar size and type to the existing requiring minimal ductwork modifications.

- 17.3.C.5 The Contractor must provide new installation hardware which must include grade five (5) steel bolts, washers, lock washers and nuts as well as new neoprene gaskets for each flange connection.
- 17.3.C.6 The contractor must install each fan in accordance with manufacturer's recommendations.
- 17.3.C.7 Each fan must re-use the isolation mounts present on the existing ductwork in order to provide a low vibration mount. Any deficiencies noted in the existing isolation mounts must be brought forward to the TA and replaced under TA approval. This will be handled by 1379 action.
- 17.3.C.8 All electrical connections must be re-established and each fan energized to ensure proper operation at all speeds.

#### **17.3.D Proof of Performance**

- 17.3.D.1 The contractor must provide the TA and ABS inspector access to the installation of the new fans during all stages of installation. Any defects noted during these inspections must be repaired at Contractor's expense.
- 17.3.D.2 The contractor must perform operational tests on each fan in order to demonstrate full operation. These tests must include operating the fans at each given speed and witnessed by the TA and ABS inspector. Any deficiencies noted must be repaired at Contractor's expense.

#### **17.3.E Deliverables**

- 17.3.E.1 The Contractor must submit a report of all installation hardware used to install each fan. This list of hardware must be included in the vessels data book.
- 17.3.E.2 All existing fans must be returned to CCG for disposal.

### **17.4 INSTALLATION OF AIR COMPRESSOR**

#### **17.4.A Identification**

- 17.4.A.1 The Contractor must remove and install a new GSM supplied air compressor to replace the forward compressor unit in the Machinery room.

#### **17.4.B References**

##### **Documents**

523233 Fisheries and Oceans – Sperre Air Compressor Technical Documentation

Instruction Manual HL2-105A\_version 02 – Instruction Manual Air Compressor HL2/105A

User Manual Controller 020518 – User Manual Sperre Controller

### **Drawings**

Machinery Arrangement 161-500-100 Sh.1 & 2

### **Regulations**

Transport Canada TP127E – Ships Electrical Standard (Latest Version)

Canada Shipping Act 2001- Marine Machinery Regulations (Latest Version)

IEEE 45 – Recommended Practice for Electrical Installations on Shipboard

## **17.4.C Statement of Work**

- 17.4.C.1 The Contractor must isolate all electrical connections to the old existing compressor.
- 17.4.C.2 The Contractor must isolate and disconnect the compressed air lines from the replacement compressor.
- 17.4.C.3 The Contractor must remove the existing compressor from its mounting in the engine room.
- 17.4.C.4 The Contractor must review the existing compressor mounts and complete any modifications to mount the new GSM supplied compressor. The new compressor is a Sperre HL2-105A that is the same unit as the aft compressor unit. The mounting is similar on both units.
- 17.4.C.5 The new compressor must be installed in accordance with manufacturer's recommendations.
- 17.4.C.6 Once the compressor is installed the compressed air lines must be reconnected.
- 17.4.C.7 Once the compressor unit is installed the compressor electrical connections must be connected and the controller installed in accordance with manufacturer's recommendations.

## **17.4.D Proof of Performance**

- 17.4.D.1 The Contractor must perform a leak test on the compressed air lines to ensure no leaks are present. This test must be completed in the attendance of the TA. If a deficiencies are noted they must be repaired at Contractors expense.

- 17.4.D.2 The Contractor must perform an operational test on the compressor in accordance with manufacturer's recommendations. The operational test must demonstrate to the TA the compressor unit is operational during all operational conditions. Any deficiencies must be repaired at contractor's expense.
- 17.4.D.3 The Contractor must allow ABS to inspect the compressor installation and operational test to obtain TCMS survey credit.

**17.4.E Deliverables**

- 17.4.E.1 The contractor must provide the TA with the certification of TCMS survey credit.
- 17.4.E.2 The contractor must provide CCG with old compressor unit for disposal.

## **18.0 COMMUNICATIONS AND NAVIGATION**

### **18.1 GMDSS INSTALLATION**

#### **18.1.A Identification**

- 18.1.A.1 The CCG has the requirement to change the GMDSS (Global Maritime Distress and Safety System) to a more modern system. This change will require equipment to be removed, new equipment to be installed and new cables pulled throughout the wheelhouse and mast locations.
- 18.1.A.2 The Contractor must inform TA ten (10) working days in advance of when the schedule to commence the work within this section of the specification.



- 18.1.A.3 All work completed by the Contractor within this sections must be completed under the supervision of CCG electrical technicians and completed to the TA's approval. All deficiencies must be repaired at the Contractor's expense.
- 18.1.A.4 All electrical disconnection must be completed by CCG electrical technicians.
- 18.1.A.5 The Contractor must removed stated equipment under the guidance of CCG electrical technicians. These removed items must be stored in a secure, climate controlled location upon removal and returned to CCG for disposal prior to the end of the contract.
- 18.1.A.6 The Contractor must pull new GSM supplied wire to the locations stated. All electrical disconnections and re-connections must be completed by CCG electrical technicians.
- 18.1.A.7 The Contractor must install new cabinets and equipment as stated under the guidance of CCG electrical technicians. All final electrical connections and commissioning will be completed by CCG electrical technicians.

#### **18.1.B** **References**

- 18.1.B.1 Drawings:

CM706-010-IN – CCGS Samuel Risley GMDSS Interconnection ( 1 of 1)

- 18.1.B.2 Documentation:

Samuel Risley's GMDSS Pictures

#### **18.1.C** **Statement of Work**

- 18.1.C.1 The Contractor under the guidance of CCG electrical technicians must disconnect and isolate all sources of power to the GMDSS system.

Turn off Breakers:

- Panel M4-12, Breaker #9 – GMDSS Battery Charger
- Panel M4-12, Breaker #11 – Inmarsat-C system
- Panel M4-12, Breaker #12 - MF/HF #1 Power Supply (Sailor N2161)

- 18.1.C.2 The Contractor must disconnect the GMDSS batteries from the GMDSS system by disconnecting the Positive and Negative cables from the posts on the batteries. Tape

up the cable ends and tuck away and secure the cables in a way that they will not get damaged or be a tripping hazard.

- 18.1.C.3 The Contractor must remove the second MF/HF #2 radio (Icom IC-M802).
- 18.1.C.4 The Contractor must disconnect power to the Navtex System and disconnect power from the 24 VDC rectifier located in the cabinet (wheelhouse, top of stairs)
- 18.1.C.5 The Contractor must move and store the following equipment;

**Sailor GMDSS 2000 equipment to be removed for disposal includes:**

- Mini C LCD display c/w Power Converter
- Battery Charger N1674
- MF/HF Power Supply N2161
- Mini C Power Supply H2096B
- MF/HF Transceiver T2130
- ATU – Starboard side (do not remove antenna or antenna feed wire)
- Keyboard and tray
- Navtex Lokata 2 Unit (including antenna and cabling)

**Icom IC-M802 MF/HF Radio system**

- Control Unit (located on chart table)
  - Transceiver (located in chart table, forward side)
  - ATU - Port side (do not remove antenna or antenna feed wire)
  - All associated cabling
- 18.1.C.6 The Contractor must ensure the following cables remain intact, un-damaged and suitable for re-use;

- **GMD-19** (see drawing: CM706-010-IN, CCGS Samuel Risley GMDSS Interconnection – 1of 1)

Existing 24VDC battery cables which run from the batteries to the battery charger. It is not necessary to replace these cables. Reroute these cable to the new power termination block and re-label GMD-19 for positive, GMD-20 for negative.

- **GMD-23** (see drawing: CM706-010-IN, CCGS Samuel Risley GMDSS Interconnection – 1of 1)

Existing 24VDC power cable which runs from the battery charger (N1674) to the forward VHF DSC radio.

- **GMD-25** (see drawing: CM706-010-IN, CCGS Samuel Risley GMDSS Interconnection – 1of 1)

Existing 120VAC power cable which runs from panel M4-12/breaker 9 to the battery charger (N1674). This will be repurposed as 120VAC for Charger “B” in the new system.

- **GMD-26** (see drawing: CM706-010-IN, CCGS Samuel Risley GMDSS Interconnection – 1of 1)  
Existing 120VAC power cable which runs from panel M4-12/breaker 12 to the battery charger (N1674). This will be repurposed as 120VAC for Charger “B” in the new system.
- **GMD-28** (see drawing: CM706-010-IN, CCGS Samuel Risley GMDSS Interconnection – 1of 1)  
Existing 120VAC power cable which runs from panel M4-12/breaker 12 to the battery charger (N1674).
- **GMD-29** (see drawing: CM706-010-IN, CCGS Samuel Risley GMDSS Interconnection – 1of 1)  
Existing RG-213 RF cable which runs between the existing forward VHF Transceiver (Sailor 6222) to Antenna #22 (main mast, lower yardarm, Stbd side, inverted antenna). It is not feasible to replace this cable at this time.
- **GMD-30** (see drawing: CM706-010-IN, CCGS Samuel Risley GMDSS Interconnection – 1of 1)  
Existing RG-213 RF cable which runs between the existing forward VHF DSC Receiver (Sailor 6222) to Antenna #24 (main mast, upper yardarm, Stbd side, upright antenna). It is not feasible to replace this cable at this time.
- **GMD-31** (see drawing: CM706-010-IN, CCGS Samuel Risley GMDSS Interconnection – 1of 1)  
Existing RG-213 RF cable which runs between the existing AFT VHF Transceiver (Sailor 6222) to Antenna #8 (fire monitor platform, port side antenna). It may not be feasible to replace this cable with LMR-400 at this time.
- **GMD-32** (see drawing: CM706-010-IN, CCGS Samuel Risley GMDSS Interconnection – 1of 1)  
Existing RG-213 RF cable which runs between the existing AFT VHF DSC Receiver (Sailor 6222) to Antenna #23 (main mast, upper yardarm, port side, upright antenna).

18.1.C.7 The Contractor must remove the following cables and store and return to CCG for disposal;

see drawing: CM706-010-IN, CCGS Samuel Risley GMDSS Interconnection – 1of 1

Remove cables GMDSS-1, GMDSS-2, GMDSS-3, GMDSS-4, GMDSS-5, GMDSS-6, GMDSS-7, GMDSS-8, GMDSS-9, GMDSS-10, GMDSS-11, GMDSS-12, GMD-13, GMDSS-14, GMDSS-15, GMDSS-16, GMD-17, GMD-18, GMD-20, GMD-21, GMDSS-22, GMDSS-24.

- **GMDSS-1**

Multiconductor data cable from MF/HF transmitter (T2130) to PORT side ATU. No data cable required for new ATU.

- **GMDSS-2**

Triax RF cable which runs between the existing MF/HF transmitter (T2130) to the ATU.

- **GMDSS-3**

RG214 cable which runs from the DSC receive long wire balun to the Protection Unit (H1223) located in the wall cabinet. This cable will be replaced with LMR-400 cable.

- **GMDSS-4**

RG213 cable which runs from the H2095B (Inmarsat C receiver) to the Inmarsat C antenna. This cable will no longer be required as the new Inmarsat C system uses a multi-conductor data cable instead of an RF cable.

- **GMDSS-5**

24V power from MF/HF SSB Power supply (N2161) to MF/HF radio.

- **GMDSS-6**

Speaker cable.

- **GMDSS-7**

RG58 cable runs between the MF/HF SSB transceiver (T2130) and RE2100 SSB control head (RE2100).

- **GMDSS-8**

Multiconductor cable which runs from the existing MF/HF transmitter (T2130) to the SSB Control Unit (RE2100).

- **GMDSS-9**

Multi-conductor cable which runs from the existing MF/HF transmitter (T2130) to the HF DSC watch receiver Power Supply (N2165).

- **GMDSS-10**

RG58 cable runs between the MF/HF SSS Transceiver (T2130) and the DSC Watch Receiver (RM2150).

- **GMDSS-11**

RG58 cable runs between the MF/HF SSB Control Unit (RE2100) and the DSC Watch Receiver (RM2150).

- **GMDSS-12**

Power cable from the MF/HF DSC watch receiver power supply (N2161) to the MF/HF DSC watch receiver.

- **GMDSS-13**

Cable from the Sat-C transceiver (H2095B) to the Sat-C Message Processor (H2098B).

- **GMDSS-14**

Cable from the Sat-C transceiver (H2095B) to the Printer (H1252B).

- **GMDSS-15**

Power cable from the Sat-C power supply (H2096B) to the Sat-C transceiver (H2095B).

- **GMDSS-16**

Power cable from the Sat-C power supply (H2096B) to the Sat-C Message Processor (H2098B).

- **GMDSS-17**

Power cable from the Sat-C power supply (H2096B) to the Sat-C Monitor Power Converter (N418).

- **GMDSS-18**

Power cable from the Sat-C power supply (H2096B) to the Printer (H1252B).

- **GMDSS-20**

24V power from the charger (N1674) to MF/HF radio Power Supply (N2161).

- **GMDSS-21**

24V power from the charger (N1674) to MF/HF DSC watch receiver Power Supply (N2165).

- **GMDSS-22**

24V power from the charger (N1674) to Sat-C Power Supply (H2096B).

- **GMD-24**

24VDC power cable which runs from the battery charger (N1674) to the aft VHF DSC radio.

18.1.C.8 The Contractor must install the new charger/PSU rack and new wall mount GMDSS cabinet. The deckhead panels surrounding the existing cabinet as well as the old GMDSS components will need to be removed prior to the cabinet replacement.

18.1.C.9 The new wooden GMDSS cabinet is GSM supplied and has been fabricated with the same outer dimensions as the old one to allow for the ceiling panels to be replaced without modification.

18.1.C.10 The Contractor must install the charger/PSU mounting rack and must be installed directly above the wooden cabinet. For ease of installation, it is recommended to install the charger/PSU mounting rack after the old wooden cabinet has been removed and before the new cabinet is installed. The rack is to be hung on top of the wall and then anchored to the wall with appropriate fasteners.

- 18.1.C.11 The Contractor must ensure the new wall cabinet is anchored to the wall using appropriate fasteners. Ensure the brass pillar used to support the existing cabinet is reused to support the weight of the new cabinet.
- 18.1.C.12 CCG Electrical Technicians will install both MF/HF transceivers that will be mounted underneath the desk where the satellite phone transceiver is currently located (See Figure: 6). the satellite phone must be relocated to the compartment to the left of its current location underneath the desk and will be completed by CCG electrical technicians.
- 18.1.C.13 The Contractor must fabricate a 1/4 inch aluminum plate with 5/16” studs pre-installed for mounting the MF/HF transceivers (See Figure: 7). The mounting plate must be installed by the Contractor using #12, flat head, self tapping sheet metal screws the aluminum plate must be fastened to the back wall below the desk.
- 18.1.C.14 The Contractor must run the following GSM supplied cable;

Cable Number	Cable Type	Location (From)	Location (To)	Notes
GMD-1	LMR-400FR	Wheelhouse, starboard wing, ceiling (Location C)	Wheelhouse, below desk (Location J)	Cable to be ran in wheelhouse ceiling, down through new cabinet, to underneath desk. Do not kink the cable or exceed a 1 inch bend radius at any time as this will necessitate the replacement of the cable.
GMD-4	LMR-400FR	Mast top, starboard side (Location D)	Wheelhouse, below desk (Location J)	Cable to be ran in wheelhouse ceiling, down through new cabinet, to underneath desk. Do not kink the cable or exceed a 1 inch bend radius at any time as this will necessitate the replacement of the cable. Tape up the end of the cable with electrical tape to prevent water from entering the cable.

<b>GMD-62</b>	LMR-400FR	Wheelhouse, starboard wing, ceiling (Location C)	Wheelhouse, below desk (Location J)	Cable to be ran in wheelhouse ceiling, down through new cabinet, to underneath desk. Do not kink the cable or exceed a 1 inch bend radius at any time as this will necessitate the replacement of the cable.
<b>GMD-13</b>	LMR-400FR	Mast top, starboard side (Location D)	Wheelhouse, below desk (Location J)	Cable to be ran in wheelhouse ceiling, down through new cabinet, to underneath desk. Do not kink the cable or exceed a 1 inch bend radius at any time as this will necessitate the replacement of the cable. Tape up the end of the cable with electrical tape to prevent water from entering the cable.
<b>GMD-61A</b>	Texcan 12 conductor/18AWG	Chart Table (Location B)	Wheelhouse, below desk (Location J)	Cable to be ran in wheelhouse ceiling, down through new cabinet, to underneath desk.
<b>GMD-3</b>	Manufacturer supplied Inmarsat-C multi-conductor cable	Main mast, top (Location I)	Wheelhouse, new GMDSS cabinet (Location A)	Do not cut off the connector on the antenna end of the cable. Tape up the end of the cable with electrical tape to prevent water from entering the cable.
<b>GMD-12</b>	Nexans MPRXCX 2 X 2.5mm <sup>2</sup> (14AWG)	Chart Table (Location B)	Wheelhouse, new GMDSS cabinet (Location A)	
<b>GMD-32</b>	Belden 1300SB CAT5e	Chart Table (Location B)	Wheelhouse, new GMDSS cabinet (Location A)	

<b>GMD-63</b>	Belden 1300SB CAT5e	Chart Table (Location B)	Wheelhouse, new GMDSS cabinet (Location A)	
<b>GMD-50</b>	LMR-400FR	Wheelhouse, top of stairwell, aft wall (Location G)	Fire monitor platform, port aft railing area (Location H)	Do not kink the cable or exceed a 1 inch bend radius at any time as this will necessitate the replacement of the cable. Tape up the end of the cable with electrical tape to prevent water from entering the cable.

18.1.C.15 The Contractor must ensure all run cables are left an extra 2 meters past the termination location.

18.1.C.16 The Contractor must ensure all cables are run inside existing cable trays and through existing cable deck glands and transits. Where the cable passes through deck glands the appropriate sized blocks must be used.

18.1.C.17 The Contractor must ensure all cables are labelled on both ends of the cable with appropriate cable tags and labelled accordingly.

#### **18.1.D Proof of Performance**

18.1.D.1 All equipment removals and installation must be completed under the supervision of CCG electrical technicians.

18.1.D.2 All work completed by the Contractor with respect to section 18.1 must be approved by CCG electrical technicians. Any deficiencies noted by TA must be repaired at Contractor's expense.

## **18.2 SAT DOME REPLACEMENT**

### **18.2.A Identification**

18.2.A.1 The Contractor must remove and replace the Email at Sea SAT dome as well as the TV SAT Dome both located on the Aft Searchlight Platform.



- 18.2.A.2 The Contractor must allow CCG electrical techs onboard to perform the disconnection of both domes as well as the securing and protecting of the cables prior to removal.
- 18.2.A.3 The Contractor must allow CCG electrical techs onboard to perform final electrical connections and commissioning of the Domes as this equipment falls under the CCG internal communication requirements.

## **18.2.B References**

### **Drawings**

S 30190st 1,2 & 3 CMS30-190-ST (3 pages) - CCGS Samuel Risley Seatel 406 Dome Pedestal & Maintenance Platform Structural Arrangement

### **Documents**

99-148045-A\_Installation Manual\_4009MK3 – Sea Tel 4009MK3-36 Installation Manual

540983 F TV5 Install Guide – TracVision TV5 Installation Guide

## **18.2.C Statement of Work**

- 18.2.C.1 The Contractor must notify the TA 10 working days prior to Dome removal to allow CCG techs the ability to come and disconnect the SAT domes and secure the cables.
- 18.2.C.2 Once the domes are disconnected the Contractor must un-bolts the existing domes from there pedestals and remove.
- 18.2.C.3 The Existing domes must be store in a warm, dry and secure location until the completion of the contract when they will be returned to CCG for disposal.
- 18.2.C.4 The Contractor must crane the new Domes into position using the Manufacturer's recommended hoisting arrangements under the supervision of CCG electrical techs.
- 18.2.C.5 Once the domes are hoisted into location the Contractor must bolt the units into place using the existing pedestals. The contractor must use 306 stainless steel bolts, washers, lock washers and nuts to complete the connections. The installation hardware must sized in accordance with Manufacturer's requirements.
- 18.2.C.6 The Contractor must make all necessary modifications to the pedestal mounts to install the new Domes.
- 18.2.C.7 Any disturbed paint must be repaired by the Contractor.

- 18.2.C.8 Once the Domes have been install the Contractor must allow CCG electrical techs to perform the final end connections for the units and commissioning of the units.

**18.2.D Proof of Performance**

- 18.2.D.1 The Contractor must demonstrate the Domes have been installed in accordance with the Manufacturer's Requirements to the TA. Any deficiencies must be repaired by the Contractor at their own expense.

**18.2.E Deliverables**

- 18.2.E.1 The Contractor must provide the old domes to CCG for disposal.

## **19.0 CONTROL SYSTEMS – Not Used**

## **20.0 – Appendix A – Government Supplied Material**

Specification Section	Quantity	Item Description
12.1	1	Wartsila VASA12V22 Short Block Assembly
12.1	10 Gal	International Paint Interprime 234 -CPA234
12.1	10 Gal	International Paint Interlac White 665- CLB000
12.1	10 Gal	International Paint Interlac Grey 665-CLA011
12.1	1 Lot	All New Gaskets and Seals to complete engine rebuild
12.1	12	Wartsila VASA12V22 Overhauled Cylinder Heads
12.1	13	Wartsila VASA12V22 Overhauled Fuel Oil Injection Pumps
12.1	2	Overhauled ABB Turbochargers
12.1	1 Lot	Used Parts removed fro existing engine to complete rebuild
14.2	3	Schneider Moulded Case Breaker #JRL36250DU31XYA1 w/ Shunt Trips
14.2	5	Schneider Moulded Case Breaker #JRL36250DU31XYA1 w/o Shunt Trips
14.2	2	Schneider Moulded Case Breaker #HRL36150U31XYA1 w/ Shunt Trip
14.2	1	Schneider Moulded Case Breaker #HRL36150U31XYA1 w/o Shunt Trip
15.1	1	4" sch.40 Galv. Victaulic Elbow 30DEg
15.1	3	4 11 Galv GRV 45 ELL
15.1	12	2 10 Galv GRV 90 ELL
15.1	12	2-1/2 10 Galv GRV 90 ELL
15.1	23	4 10 Galv GRV TEE
15.1	2	2-1/2 20 Galv GRV TEE
15.1	5	4 20 Galv GRV TEE
15.1	40	2 77 Galv STD CPLG W/E GSKT
15.1	50	2-1/2 77 Galv STD CPLG W/E GSKT
15.1	3	3 77 Galv STD CPLG W/E GSKT
15.1	88	4 77 GALV STD CPLG W/E GSKT
15.1	2	2-1/2X2 50 GALV GRV RED
15.1	2	3X2 50 GALV GRV RED
15.1	1	4X2-1/2 50 GALV GRV RED
15.1	1	4X2 50 GALV GRV RED
15.1	1	2 700 BFV LVR-LK HDL W/E
15.1	1	2-1/2 700 BFV LVR-LK HDL W/E
15.1	5	4 700 BFV LVR-LK HDL W/E
15.1	2	4 712 GRV CHK VLV W/E

17.2	2	Atmosphair 47.5" FH x 33"FL Tag 1.3.1 Hot Water Coil
17.2	2	Atmosphair 32.5" FH x 48"FL Tag 1.3.2 Hot Water Coil
17.2	1	Atmosphair 12.5" FH x 12"FL Tag 1.3.2 Hot Water Coil
17.2	4	Atmosphair V-252 Fan Heaters w/ diffuser
17.3	2	Myson Model #30G4/8 supply fan or similar
17.3	2	Myson Model #30 1/3 4P/8 Exhaust Fan or similar
17.3	2	Myson Model #30G.4P/8P Supply Fan or similar
17.3	5	Myson Model #194P8P Supply/Exhaust Fan or similar
17.3	1	Myson Model #15GV4/8P Supply Fan or similar
17.3	1	Myson Model #15GVP Exhaust Fan or similar
17.3	2	Myson Model #15G4P Supply Fan or similar
17.3	2	Myson Model #12G2.4P Supply Fan or similar
17.3	1	26"L x 12.25"OD Supply Fan
17.4	1	Sperre Air Compressor Model# TSHL07A
17.4	1	Sperre Control Cabinet Model# Z32510000
17.4	1	Sperre Transmitter Model# 84130
17.4	1	Sperre Vibration Damper Set Model# 8458S1
17.4	1	Sperre 1" Flex Tube Model# 4597
17.4	1	Sperre 1/2" Flex Tube Model# 4595
17.4	1	Sperre Drain/unload Valve Model# 9170
17.4	1	Sperre SPK Pressure Transmitter Model# 56551
17.4	1	Sperre Oil Level Switch Model# 4356
17.4	1	Sperre SPK Temp Transmitter Model# 56481
18.1	1	Wodden Cabinet to replace current GMDSS cabinet
18.1	1	Transceiver mounting plate
18.1	1	Charger Rack
18.1	1 lot	LMR-400 Cable
18.1	1 lot	Texcan 12C/18AWG Cable
18.1	1 unit	Inmarsat-C specialty cable
18.1	1 lot	Nexan MPRXCX 2C/14AWG cable
18.1	1 lot	Belden 1300SB LAN Cable
18.2	1	Seatel 4009MK3-36 Dome
18.2	1	KVH Tracvision TV5 Dome

ANNEX H – Appendix 1 - PRICING DATA SHEET F2599-195017

For completion of the Pricing Data Sheet, the Bidder must price all lines as detailed below. The line for the Total Cost of each Spec Item must include each of the detailed items listed, as well as any and all costs associated with completing the full requirement of the Spec Item.

Company name:		Dry Docking 2019 Samuel Risley			
Spec #	Spec Ref #	Description	Total Hours	Total Labour Cost (\$)	Total Material Cost (\$)
<b>\$1.0</b>		<b>Services</b>			
	S1.1	General			
	S1.6	Electrical Power			
	S1.6.10	Kilowatt-hour for electrical power - unit price per kWh.			\$ ____/kWh
	S1.7	Potable Water supply (per litre)			\$ ____/L
	S1.13	Black & Grey Water disposal (per litre)			\$ ____/L
		<b>Total Cost - Spec \$1.0 - Services</b>			
<b>\$2.0</b>		<b>Total Cost - Spec \$2.0 - Docking and Undocking</b>			
<b>11</b>		<b>Hull and Related Structures</b>			
	11.1	Underwater Hull Inspection			
		Hull Cleaning			
		Hull Inspection			
		Repair of hull seams and butts welds - 40m			
		Repair of hull seams and butts welds - unit price			\$ ____/m
	11.2	Underwater hull painting			
		Grit Blast			
		Hull coat application			
	11.3	Above Hull Painting			
		Grit blast			
		Hull Coating application			
	11.4	Sea Inlets			
		Open			
		Clean & Inspect			
		Repair (under 1379)			
		Paint			
		Close			
<b>12</b>	11.5	Bilge, sewage, Cofferdam and Void cleaning			
	12.1	Main Engine #4 Replacement			
		Cut deck			
		Remove existing Engine			
		Install New engine			
		Rebuild New engine			
		Close hole in deck			
		Commissioning of the Engine			
<b>13</b>	13.1	Generator Overhaul			
<b>14</b>	14.1	Megger Test			
	14.2	Breaker Replacement			
<b>15</b>	15.1	Replace of Ship-side Valves			
	15.2	Piping Stub-end renewal			
		Crop out existing			
		Fabricate new			
		Install new stub-ends			
	15.3	Fire Main Replacement			
<b>16</b>	16.1	Chief Engineer floor repair			
	16.2	Boat & Focslie Deck renewal			
<b>17</b>	17.1	Anchor Windlass Overhaul			
	17.2	Thermal Heater Replacement			
	17.3	HVAC Axial Fan Replacement			
	17.4	Replace Air Compressor			
<b>18</b>	18.1	GMDSS Installation			
	18.2	SAT Dome Replacement			
<b>Total</b>					

Transfer this amount under  
Annex H, Table H1.