



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

**Bid Receiving - PWGSC / Réception des
soumissions - TPSGC**

11 Laurier St. / 11, rue Laurier

Place du Portage , Phase III

Core 0B2 / Noyau 0B2

Gatineau

Québec

K1A 0S5

Bid Fax: (819) 997-9776

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

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

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

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

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

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du

fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Marine Machinery and Services / Machineries et services maritimes

11 Laurier St. / 11, rue Laurier

6C2, Place du Portage

Gatineau

Québec

K1A 0S5

Title - Sujet Addition of isolation to ships fuel	
Solicitation No. - N° de l'invitation F7044-160255/A	Date 2017-02-10
Client Reference No. - N° de référence du client F7044-160255	
GETS Reference No. - N° de référence de SEAG PW-\$\$ML-053-26182	
File No. - N° de dossier 053ml.F7044-160255	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2017-02-28	Time Zone Fuseau horaire Eastern Standard Time EST
F.O.B. - F.A.B. Specified Herein - Précisé dans les présentes Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input checked="" type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Taiebi, Rafik	Buyer Id - Id de l'acheteur 053ml
Telephone No. - N° de téléphone (819) 420-4051 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF FISHERIES AND OCEANS NGCC 867 Lakeshore Road Burlington Ontario L7S1A1 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

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

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PART 1 - GENERAL INFORMATION

1.1 Security Requirements

There is no security requirement applicable to this Submission.

1.2 Statement of Work - Bid

The Work to be performed is detailed under Annex A.

1.3 Debriefings

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

1.4 Trade Agreements

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

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

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

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

The *2003 (04-04-2016)* Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.1.1 SACC Manual Clauses

B1000T (*2014-06-26*) Condition of Material – Bid.

2.2 Submission of Bids

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

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than **five (5)** 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 question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

2.4 Applicable Laws

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

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

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2.5 Optional Site Visits – the three Vessels

It is recommended that the Bidder or a representative of the Bidder visit the work site. Arrangements Will be made for the site visit in demand of the bidder. All Contractors must have valid identification to sign in at the Main Gate.

The site of work: Canada Centre of Inland Waters (CCIW), 867 Lakeshore Rd, Burlington, ON L7S 1A1
Map: <http://www.tbs-sct.gc.ca/dfrp-rbif/pn-nb/10251-eng.aspx?qid=23397480>

Instruction for the visit:

Please send a visit request to the contracting authority who will take all the necessary measures for the smooth running of the visit.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

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

Section I: Technical Bid, 2 hard copies and 1 soft copy in PDF format

Section II: Financial Bid, 1 hard copy and 1 soft copy in PDF format

Section III: Certifications, 1 hard copy and 1 soft copy in PDF format

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

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

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

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

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

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

Section I: Technical Bid

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment. The total amount of Applicable Taxes must be shown separately.

3.1.1 Electronic Payment of Invoices – Bid

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

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If Annex "D" 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.

3.1.2 Exchange Rate Fluctuation

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

Section III: Certifications

Bidders must submit the certifications and additional information required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

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

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

An offer must meet the requirements of the bid solicitation and meet all mandatory technical evaluation criteria in order to be declared admissible. The bidder must submit supporting documentation in accordance with this requirement.

The mandatory technical criteria as described in Annex "C" of this submission.

4.1.2 Financial Evaluation

The bid price will be valued in Canadian dollars, excluding applicable taxes, including Canadian customs and excise taxes.

- i) The Bidder must complete one (1) financial bid for each vessel.
- ii) The Financial Evaluation criteria is described on Annex "C", Evaluation Plan.

4.2 Basis of Selection

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

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

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

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

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

5.1 Certifications Required with the Bid

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

5.1.1 Integrity Provisions - Declaration of Convicted Offences

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

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame 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)* (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the *[Employment and Social Development Canada \(ESDC\) - Labour's](http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969)* website (http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969).

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.

PART 6 - RESULTING CONTRACT CLAUSES

6.1 Security Requirements

There is no security requirement applicable to the Contract.

6.2 Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex "A".

6.3 Standard Clauses and Conditions

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

6.3.1 General Conditions

2010C (04-04-2016), General Conditions - Services (Medium Complexity) apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Period of the Contract

The contract period is from the date of the contract until June 30, 2017 inclusive.

6.4.2 Delivery Date

All the deliverables must be received on or before March 31, 2017.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Rafik Taiebi
Title: Contracting Authority
Public Works and Government Services Canada
Acquisitions Branch
Directorate: Marine
Address: Place du Portage, Phase III -6C2, 11 Laurier St, Gatineau, QC, K1A 0S5
Telephone: 819-420-4051
E-mail address: rafik.taiebi@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.

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6.5.2 Project Authority

The Project Authority for the Contract is:

Name: _____
Title: _____
Organization: _____
Address: _____

Telephone: _____
Facsimile: _____
E-mail address: _____

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

6.5.3 Contractor's Representative

Name: _____
Title: _____
Organization: _____
Address: _____

Telephone: _____
Facsimile: _____
E-mail address: _____

6.6 Payment

6.6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm unit price in accordance with the Basis of Payment Annex "B". Customs duties are included, and Applicable Taxes are extra.

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.

6.6.2 Multiple Payments

SACC Manual clause H1001C (2008-05-12) Multiple Payments.

6.6.3 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);

6.7 Invoicing Instructions

1. The Contractor must submit its invoices in accordance with the article entitled "Presentation of Invoices" of the General Conditions. Invoices must not be submitted until all the work identified on the invoice is completed.
2. Each invoice must be supported by:
 - A. A copy of the work report.
 - B. A copy of the time sheets to corroborate the claimed work time (for unscheduled work);
 - C. A copy of invoices, receipts, vouchers for all direct costs and all travel and living expenses (for unscheduled work);
3. Invoices must be distributed as follows:
 - (A) The original and two (2) copies of all invoices must be sent to the appropriate recipient.
 - (B) One (1) copy shall be sent to the Contracting Authority.

6.8 Certifications and Additional Information

6.8.1 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.

6.9 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____ (*The contracting authority will insert the name of the province at Contract Award as specified by the bidder in its bid*)

6.10 Priority of Documents

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

- (a) The Articles of Agreement;
- (c) General Conditions 2010C (*2016-04-04*), General Conditions - Services (Medium Complexity)
- (d) Annex A, Statement of Work;
- (e) Annex B, Basis of payment;
- (e) Annex C, Evaluation plan;
- (f) The Contractor's bid dated _____ (*The contracting authority will insert the date of bid at Contract Award;*)

6.11 **SACC Manual Clauses**

A9019C (2011-05-16) Hazardous Waste Disposal.
B1501C (2006-06-16) Electrical Equipment.
B7500C (2006-06-16) Excess Goods.

6.12 **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 Department of Fisheries and Oceans 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.

6.13 **Inspection and Acceptance of the Work**

All the Work is subject to inspection and acceptance by Canada. Inspection and acceptance of the Work by Canada do not relieve the Contractor of its responsibility for defects or other failures to meet the requirements of the Contract. Canada will have the right to reject any Work that is not in accordance with the requirements of the Contract and require its correction or replacement at the Contractor's expense.

The Contractor must inspect and approve any part of the Work before submitting it for acceptance or delivering it to Canada. The Contractor must keep accurate and complete inspection records that must be made available to Canada on request.

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ANNEX "A" TECHNICAL STATEMENT OF REQUIREMENT

SEE ATTACHED

For drawings and publications referred in Annex A, part 1.3. Please contact the Contracting Authority by email, rafik.taiebi@tpsgc-pwgsc.gc.ca.

ANNEX « B » BASIS OF PAYMENT

Annex B will constitute the basis for the payment of the subsequent contract and will be completed with the data from the financial submission of Annex C

During the contract period, the Contractor will be paid as specified below for work performed under the Contract.

1- Fixed rate calculation

1.1- Fixed Rate Calculation for Private Robertson

Types of work	Sub total	Total
Fuel tank insulation	\$ _____	\$ _____
Reconfiguring Tubing for tank # 9	\$ _____	
Installing the splash guard	\$ _____	
Report on Adding and Removing Weights	\$ _____	
Tank Inspection (As per 6.4 to 6.11 of Annex A)	\$ _____	

1.2-Fixed Rate Calculation for Corporal Teather

Types of work	Sub total	Total
Fuel tank insulation	\$ _____	\$ _____
Reconfiguring Tubing for tank # 9	\$ _____	
Installing the splash guard	\$ _____	
Report on Adding and Removing Weights	\$ _____	
Tank Inspection (As per 6.4 to 6.11 of Annex A)	\$ _____	

1.3-Fixed Rate Calculation for Constable Carriere

Types of work	Sub total	Total
Fuel tank insulation	\$ _____	\$ _____
Reconfiguring Tubing for tank # 9	\$ _____	
Installing the splash guard	\$ _____	
Report on Adding and Removing Weights	\$ _____	
Tank Inspection (As per 6.4 to 6.11 of Annex A)	\$ _____	

2.0 Professional Fees for Unforeseen Work Only

2.1- Normal hours of work

The daily working hours of the executive officers and employees of the tenderer shall be an eight (8) hour period in a day when they are actually providing services between 07:00 and 17:00

2.2- Overtime

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

2.3- The Contractor will be paid according to the hourly rates and the fixed rates indicated below:

(The contract manager will indicate the hourly rates as specified by the bidder in his offer, if there are other trades, please add them in the tables below

Occupation Corps	Regular Hourly Rate	Hourly rate (additional)	Hourly rate (Saturday and Sunday)
Welder	\$ _____	\$ _____	\$ _____
Painter	\$ _____	\$ _____	\$ _____
Day laborer	\$ _____	\$ _____	\$ _____
Chemist	\$ _____	\$ _____	\$ _____

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3 Materials and replacement parts and subcontracting

3.1 Materials, replacement parts and spare parts

The Contractor will be paid the net laid-down cost of materials and replacement parts to which will be added a mark-up of 10 percent, plus Applicable Taxes.

3.2 Subcontracting

The Contractor will be paid the net laid-down cost for subcontracting services to which will be added a mark-up of 10 percent, plus Applicable Taxes.

4.0 Travel and living expenses

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

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

All payments are subject to verification by the government.

5.0 Estimated travel time and distance:

The Contractor will be paid a minimum amount of a first half hour, calculated from the contractor's technician's arrival time on site. All additional chargeable time after the first half hour will be rounded to the nearest quarter hour.

ANNEX "C» EVALUATION PLAN

1 Technical Evaluation

1.1 Mandatory technical criteria

The bidder must provide full details of where, when (month and year), the category of work enumerate in the mandatory criteria in Section M.4 and the type of equipment to repair (manufacturer and model) and provide a brief description of the work performed.

The mandatory technical criteria are identical for the three vessels. Only one sheet is required.

The mandatory technical criteria are described in the table below

Mandatory technical criteria	
Name of the bidder:	
Date :	
Description of criteria	
M.1	The contractor chemist and / or subcontractor chemist must have a certificate from a marine chemist to perform the work in the vessels (Annex A, section 1.4.5)
M.2	The welder of the contractor and / or the welder subcontractor must have a certification of the companies for the fusion welding of steel and aluminum, Division certification of at least a level 2.
M.3	The welder of the contractor and / or the sub-contractor must be certified by the Canadian Welding Bureau in accordance with CSA Standards W47.1-2009, latest revision.
M.4	The bidder must demonstrate that he has completed at least one project in each the following categories of works from A to E within the last five (5) years:
A.	Fuel tank insulation;
B.	Reconfiguration of fuel pipes;
C.	Welding (by melting the steel and aluminum) on vessel;
D.	Drafting of technical reports;
E.	Cleaning of tanks;
M.5	The bidder must have a record of employment free accident (s), incidents and unsatisfactory work history on CCG vessels, during the last two years, including the following:
A.	The bidder's personnel must not have a serious or minor accident on a CCG vessel within the last two years of the date of issuance of the invitation: (Any injury that requires more than first aid). This does not include first-aid injuries that require a medical check-up for CSST or company reasons.
B.	The bidder's personnel must not have had an incident that caused damage to the CCG equipment on board a vessel within the last two years of the date of the invitation issuance. This includes an incident / accident that could have caused a serious or minor injury in the last two years.
C.	The bidder must not have an unsatisfactory rating on a contract or a call-up against the standing offer within the last two years of the date of the invitation.

2 Financial evaluation

2.1 Financial Evaluation Criteria

The bidder must present his hourly and firm prices in accordance with this Annex. The contracting authority shall transfer the hourly and firm prices to Annex B for the winning bid at the time of publication.

2.2 Offer Receivable

The Bidder must complete the Financial Bid Evaluation Tables. In order for the financial evaluation to be admissible, all the boxes for hourly rates and costs must be correctly filled in.

2.3 Level of effort

The above effort levels are only estimates for the financial evaluation and should not be considered in any way as a commitment by Canada.

3 Financial Assessment of Rates

3.1-Fixed rate for the work on Private Robertson vessel:

Article	Description	
1a	General Remarks (Bidders can enter \$0.00 or indicate "included" if the fees for this item are distributed in each of the items bellow. In case the fees are not distributed an amount must be indicated in the price box.)	
2a	Fuel Tank Isolation Mobilisation / Demobilisation : \$ _____ Material, equipment and consumables : \$ _____ Labour ; \$ _____ / hour X _____ hours : \$ _____ Quality Assurance report : \$ _____ Total for item 2:	\$ _____
3a	Fuel Tank #9 Vent Reconfiguration Mobilisation / Demobilisation : \$ _____ Material, equipment and consumables : \$ _____ Labour ; \$ _____ / hour X _____ hours : \$ _____ Quality Assurance report : \$ _____ Non destructive testing: \$ _____ Total for item 3:	\$ _____
4a	Splash Shield Installation Mobilisation / Demobilisation : \$ _____ Material, equipment and consumables : \$ _____ Labour ; \$ _____ / hour X _____ hours : \$ _____ Total for item 4	\$ _____
5a	Report on weight addition and removal Report for the CCGS Private Robertson.: \$ _____ Total for item 5:	\$ _____
6a	Tank inspection	

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6.4 Fuel Tank	Price for tank no 8a : \$ _____ Price for emergency generator tank=\$ _____ Removal, Disposal of mud and liquid. (final amount prorated) Price per liter _____ \$ / liter X 100 liters=\$ _____ Price for pressure testing tank=\$ _____ subtotal for 6.4:	_____ \$
6.5 Gasoline Tank	Price for port tank no 13: \$ _____ Price for stbd tank no 14 : \$ _____ Removal, Disposal of mud and liquid. (final amount prorated) Price per liter _____ \$ / liter X 100 liters=\$ _____ subtotal for 6.5:	_____ \$
6.6 Lube Oil Tank	Price for port tank no 5: \$ _____ Storage of oil in clean containers (including pumping out and pumping back) Price per liter _____ \$ / liter X 100 liters=\$ _____ subtotal for 6.6:	_____ \$
6.7 Ballast Tanks	Price for Port tank no 17=\$ _____ Price for Starboard tank no 18=\$ _____ Disposal of mud and waste water as well as cleaning water . (final amount prorated) Price per liter _____ \$ / liter X 100 liters=\$ _____ subtotal for 6.7	_____ \$
6.8 Potable Water Tanks (excluding sections of work for items below)	High pressure cleaning (5000 psi) Price for Port water tank=\$ _____ Price for Starboard water tank=\$ _____ Disposal of mud and waste water as well as cleaning water . (final amount prorated) Price per liter _____ \$ / liter X 100 liters=\$ _____ Coating repairs (surface preparation and painting of 30 random areas of 0,2 m2 (final amount prorated) Price per area & _____ / zone X 30 areas = _____ \$ subtotal for 6.8	_____ \$
6.9 Heating Fresh water tanks	6.9 Heating Fresh water tanks Mobilisation / Demobilisation : \$ _____ Material, equipment and consumables : \$ _____ Labour ; \$ _____ / hour X _____ hours : \$ _____ Total for item 6.9	_____ \$
6.11 Miscellaneous tanks	High pressure cleaning (5000 psi) Price for dirty oil and sludge tank no 15: \$ _____	_____ \$

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CCC No./N° CCC - FMS No./N° VME

	Price for sewage and sludge tank no 6: \$ _____ Price for grey water tank no 7a: \$ _____ Price for black water tank no 7b: \$ _____ Disposal of mud and waste water as well as cleaning water . (final amount prorated including decontamination fees) Mud -Price per liter _____ \$ / liter X 100 liters=\$ _____ waste water -Price per liter _____ \$ / liter X 100 liters=\$ _____ *treatment of the cleaning water must be included to the cleaning price. Coating repairs (surface preparation and painting of 10 random areas of 0,2 m2 (final amount prorated) Price per area & _____ / zone X 10 areas = _____ \$ subtotal for 6.11	
Firm price for item 6a		_____ \$

Sous total 3.1=	2a+3a+4a+5a+6a=	\$ _____ (10)
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3.2- Fixed rate for the work on the Corporal Teather vessel :

Article	Description	
1b	General Remarks (Bidders can enter \$0.00 or indicate "included" if the fees for this item are distributed in each of the items below. In case the fees are not distributed an amount must be indicated in the price box.)	
2b	Fuel Tank Isolation Mobilisation / Demobilisation : \$ _____ Material, equipment and consumables : \$ _____ Labour ; \$ _____ / hour X _____ hours : \$ _____ Quality Assurance report : \$ _____ Total for item 2:	\$ _____
3b	Fuel Tank #9 Vent Reconfiguration Mobilisation / Demobilisation : \$ _____ Material, equipment and consumables : \$ _____ Labour ; \$ _____ / hour X _____ hours : \$ _____ Quality Assurance report : \$ _____ Non destructive testing: \$ _____ Total for item 3:	\$ _____
4b	Splash Shield Installation Mobilisation / Demobilisation : \$ _____ Material, equipment and consumables : \$ _____ Labour ; \$ _____ / hour X _____ hours : \$ _____ Total for item 4	\$ _____
5b	Report on weight addition and removal Report for the CCGS Corporal Teather.: \$ _____ Total for item 5:	\$ _____
6b	Tank inspection	

6.4 Fuel Tank	Price for tank no 8a : \$ _____ Price for emergency generator tank=\$ _____ Removal, Disposal of mud and liquid. (final amount prorated) Price per liter _____ \$ / liter X 100 liters=\$ _____ Price for pressure testing tank=\$ _____ subtotal for 6.4:	_____ \$
6.5 Gasoline Tank	Price for port tank no 13: \$ _____ Price for stbd tank no 14 : \$ _____ Removal, Disposal of mud and liquid. (final amount prorated) Price per liter _____ \$ / liter X 100 liters=\$ _____ subtotal for 6.5:	_____ \$
6.6 Lube Oil Tank	Price for port tank no 5: \$ _____ Storage of oil in clean containers (including pumping out and pumping back) Price per liter _____ \$ / liter X 100 liters=\$ _____ subtotal for 6.6:	_____ \$
6.7 Ballast Tanks	Price for Port tank no 17=\$ _____ Price for Starboard tank no 18=\$ _____ Disposal of mud and waste water as well as cleaning water . (final amount prorated) Price per liter _____ \$ / liter X 100 liters=\$ _____ subtotal for 6.7	_____ \$
6.8 Potable Water Tanks (excluding sections of work for items below)	High pressure cleaning (5000 psi) Price for Port water tank=\$ _____ Price for Starboard water tank=\$ _____ Disposal of mud and waste water as well as cleaning water . (final amount prorated) Price per liter _____ \$ / liter X 100 liters=\$ _____ Coating repairs (surface preparation and painting of 30 random areas of 0,2 m2 (final amount prorated) Price per area & _____ / zone X 30 areas = _____ \$ subtotal for 6.8	_____ \$
6.9 Heating Fresh water tanks	6.9 Heating Fresh water tanks Mobilisation / Demobilisation : \$ _____ Material, equipment and consumables : \$ _____ Labour ; \$ _____ / hour X _____ hours : \$ _____ Total for item 6.9	_____ \$
6.11 Miscellaneous tanks	High pressure cleaning (5000 psi) Price for dirty oil and sludge tank no 15: \$ _____	_____ \$

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	Price for sewage and sludge tank no 6: \$ _____ Price for grey water tank no 7a: \$ _____ Price for black water tank no 7b: \$ _____ Disposal of mud and waste water as well as cleaning water . (final amount prorated including decontamination fees) Mud -Price per liter _____ \$ / liter X 100 liters=\$ _____ waste water -Price per liter _____ \$ / liter X 100 liters=\$ _____ *treatment of the cleaning water must be included to the cleaning price. Coating repairs (surface preparation and painting of 10 random areas of 0,2 m2 (final amount prorated) Price per area & _____ / zone X 10 areas = _____ \$ subtotal for 6.11	
Firm price for item 6b		_____ \$

Sous total 3.2=	2b+3b+4b+5b+6b=	\$ _____ (20)
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3.3-Fixed rate for the work on the Constable Carriere vessel:

Article	Description	
1c	General Remarks (Bidders can enter \$0.00 or indicate "included" if the fees for this item are distributed in each of the items below. In case the fees are not distributed an amount must be indicated in the price box.)	
2c	Fuel Tank Isolation Mobilisation / Demobilisation : \$ _____ Material, equipment and consumables : \$ _____ Labour ; \$ _____ / hour X _____ hours : \$ _____ Quality Assurance report : \$ _____ Total for item 2:	\$ _____
3c	Fuel Tank #9 Vent Reconfiguration Mobilisation / Demobilisation : \$ _____ Material, equipment and consumables : \$ _____ Labour ; \$ _____ / hour X _____ hours : \$ _____ Quality Assurance report : \$ _____ Non destructive testing: \$ _____ Total for item 3:	\$ _____
4c	Splash Shield Installation Mobilisation / Demobilisation : \$ _____ Material, equipment and consumables : \$ _____ Labour ; \$ _____ / hour X _____ hours : \$ _____ Total for item 4	\$ _____
5c	Report on weight addition and removal Report for the CCGS Constable Carriere.: \$ _____ Total for item 5:	\$ _____
6c	Tank inspection	

6.4 Fuel Tank	Price for tank no 8a : \$ _____ Price for emergency generator tank=\$ _____ Removal, Disposal of mud and liquid. (final amount prorated) Price per liter _____ \$ / liter X 100 liters=\$ _____ Price for pressure testing tank=\$ _____ subtotal for 6.4:	_____ \$
6.5 Gasoline Tank	Price for port tank no 13: \$ _____ Price for stbd tank no 14 : \$ _____ Removal, Disposal of mud and liquid. (final amount prorated) Price per liter _____ \$ / liter X 100 liters=\$ _____ subtotal for 6.5:	_____ \$
6.6 Lube Oil Tank	Price for port tank no 5: \$ _____ Storage of oil in clean containers (including pumping out and pumping back) Price per liter _____ \$ / liter X 100 liters=\$ _____ subtotal for 6.6:	_____ \$
6.7 Ballast Tanks	Price for Port tank no 17=\$ _____ Price for Starboard tank no 18=\$ _____ Disposal of mud and waste water as well as cleaning water . (final amount prorated) Price per liter _____ \$ / liter X 100 liters=\$ _____ subtotal for 6.7	_____ \$
6.8 Potable Water Tanks (excluding sections of work for items below)	High pressure cleaning (5000 psi) Price for Port water tank=\$ _____ Price for Starboard water tank=\$ _____ Disposal of mud and waste water as well as cleaning water . (final amount prorated) Price per liter _____ \$ / liter X 100 liters=\$ _____ Coating repairs (surface preparation and painting of 30 random areas of 0,2 m2 (final amount prorated) Price per area & _____ / zone X 30 areas = _____ \$ subtotal for 6.8	_____ \$
6.9 Heating Fresh water tanks	6.9 Heating Fresh water tanks Mobilisation / Demobilisation : \$ _____ Material, equipment and consumables : \$ _____ Labour ; \$ _____ / hour X _____ hours : \$ _____ Total for item 6.9	_____ \$
6.11 Miscellaneous tanks	High pressure cleaning (5000 psi) Price for dirty oil and sludge tank no 15: \$ _____	_____ \$

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<p>Price for sewage and sludge tank no 6: \$ _____</p> <p>Price for grey water tank no 7a: \$ _____</p> <p>Price for black water tank no 7b: \$ _____</p> <p>Disposal of mud and waste water as well as cleaning water . (final amount prorated including decontamination fees)</p> <p>Mud -Price per liter _____ \$ / liter X 100 liters=\$ _____</p> <p>waste water -Price per liter _____ \$ / liter X 100 liters=\$ _____</p> <p>*treatment of the cleaning water must be included to the cleaning price.</p> <p>Coating repairs (surface preparation and painting of 10 random areas of 0,2 m2 (final amount prorated)</p> <p>Price per area & _____ / zone X 10 areas = _____ \$</p> <p>subtotal for 6.11</p>	<p>Firm price for item 6c</p> <p>_____ \$</p>
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Sous total 3.3=	2c+3c+4c+5c+6c=	\$ _____ (30)
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3.4 Calculation of Rates for Unscheduled Work

(If there are other trades for the execution of the works, please add them in the table below)

		Hourly rates			Evaluation calculation		
		a	b	c	e	f	
	Occupation Corps	Regular rate (Monday to Friday)	Hourly rate (outside normal hours Monday to Friday)	Hourly rate (Saturday and Sunday)	Sub Total (a + b + c) / 3	Hours	Sub total (e * f)
1	Welder					50	
2	Painter					50	
3	Day laborer					50	
4	Chemist					50	
5						50	
6						50	
7						50	
8						50	
9						50	
10						50	

Sous total 3.4=	1+2+3+4+5+6+7+8+9+10=	\$ _____ (40)
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Total Financial Evaluation	(10)+(20) +(30) +(40)=	\$ _____
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ANNEX « D » ELECTRONIC PAYMENT INSTRUMENTS

The bidder agrees to be paid through one of the following electronic payment instruments:

- ☐ VISA purchase card;
- ☐ MasterCard purchase card;
- ☐ Direct deposit (national and international).

Fuel oil Tank Isolation
Vent modification
Transformer guard

SPECIFICATION

Hero class | m.s.p.v.
GGCS Private Robertson
CCGS Constable Carriere
CCGS Corporal Teather

November 28th 2016

Contenu

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1 GENERAL NOTES

1.1 Identification

- 1.1.1 These general remarks describe the requirements of the Canadian Coast Guard (CCG) applicable to all the attached technical specifications.
- 1.1.2 Any piping, manholes, parts and/or equipment requiring removal to carry out specified work and/or to gain access shall be replaced upon completion with new jointing, nuts, bolts, anti-seize compound, clamps and brackets as applicable (Contractor supply), and secured in original condition. Any removals shall be jointly inspected by both Contractor and the TA prior to removal.
- 1.1.3 The overhaul and installation of all machinery and equipment specified herein shall be as per the manufacturers' applicable instructions, drawings and specifications.
- 1.1.4 All the following work specified herein and all repairs, inspections and renewals shall be completed to the satisfaction of the Coast Guard Technical Authority (TA), who, unless otherwise advised, will be the Chief Engineer of the ship. Upon completion of each item of the specification, the technical authority shall be so notified so that he may inspect the work prior to final closing up and after complete closing up. Failure to give notification does not absolve Contractor of the responsibility of providing the TA the opportunity to inspect any item. Inspection of any item by the TA does not substitute for any required inspection by Lloyds Register or other governing body.

1.2 Ships Particulars:

Length Over All	42.8 m
Length at Water Line	39.9 m
Max Beam	7.0 m
Beam at Water Line	6.8 m
Fwd Draft	2.8 m
Aft Draft	2.8 m
Freeboard	1.7 m
Gross Tonnage	253.0 t
Cruising Range	2000 nm
Endurance	14 d
Cruising Speed	14.0 kts
Maximum Speed	25.0 kts
Class Notations	
Hull Notation:	+100A1 SSC PATROL, MONO, HSC, G4, EP.
Descriptive Notes:	ABBREVIATED NOTE GREEN PASSPORT

1.3 Reference Documents

Document	Title	Included Yes/No
Plan		
AF6094-50000-02	Air pipe and Sounding diagram	Yes
C15-49-002-01	Tank #9 additional vent line installation	Yes
C15-49-002-02	Installation Drawing	Yes
C15-49-003-01 R2	Fuel oil Tank #9 vent reconfiguration specification	Yes
C15-49-506-01 R1	Air pipes and sounding Diagram	yes
AF6094-54100-01	Fuel Oil System	yes
Figure 1	Auxiliary Machine Space Port	Yes
Publications		No
ASTM F992-86 (2006)	Standard Specification for Valve Label Plates	No
DFO 5737 7.A.1	Assessing Risk	Yes
DFO 5737 7. B.1	Diving operation	Yes
DFO 5737 7. B.2.	Fall protection	Yes
DFO 5737 7. B.3	Access to confined spaces	Yes
DFO 5737 7. B.4	Hot work	Yes
DFO 5737 7. B.5	Locking and labelling	Yes
DFO 5737 7. B.6	Electrical work on energized circuits	Yes
DFO 5737 10. A.7	Contractor safety and security	Yes
CCGS-30-000-000-ES-TE-001	Coast Guard's Color Coding Standard for Piping System	Yes
TP127E	Transport Canada's Marine Safety Electrical Standards	No
IEEE 45	Recommended Practice for Electrical Installations on Shipboard	No
	Canadian Coast Guard Welding Standard	Yes
CSA W47.1	Certification of Companies for Fusion Welding of Steel Structures Division 2 Certification	No
CSA W47.2	Certification of Companies for Fusion Welding of Aluminum	No
CSA W59	Welded Steel Construction – Metal Arc Welding	No
CSA W59.2	Welded Aluminum Construction	No
Standards		
	Lloyds Register Rules and Regulation for the Classification of Special Service Craft	No
Regulations		
	Canada shipping act 2001	No
CLC	Canada Labour Code	No
MOSH	Marine Occupational Safety and Health	No

	Non-smokers' Health Act	No
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1.4 Occupational Health and Safety

- 1.4.1 The contractor and all sub-contractors must comply with occupational health and safety (OHS) instructions in accordance with relevant federal and provincial OHS regulations and ensure that the contractor's activities are conducted safely and without compromising the safety of any personnel.
- 1.4.2 The contractor and its employees, including sub-contractors, must participate in an orientation session on safety on board the vessel prior to commencing work in order to fully understand the risks specific to a vessel and the work protocol permit systems, as well as the procedures for safety, risk prevention, intervention in case of danger and assessment of safety prior to working. The contractor will have access to an uncontrolled copy of the Fleet Safety and Security Manual.
- 1.4.3 The contractor must comply with the Fleet Safety and Security Manual (DFO/5737) and with the work instructions on board the vessel, in addition to the relevant *Canada Labour Code* regulations, while performing tasks that include the following aspects:
- Hot work;
 - Work at height;
 - Confined spaces Entry;
 - Gas freeing for entry and hot work;
 - Lock out / Tag out;
 - Pre-Job Safety assessments.
- 1.4.4 For the purpose of Lock out / Tag out procedures, the contractor must provide locks and locking devices to its employees in addition to those supplied by the vessel's Chief Engineer.
- 1.4.5 The contractor must provide a copy of the gas free certificate from a certified marine chemist or other qualified person with technical authority when performing work in tanks and bilges, prior to beginning work. The certificates must specify "Safe for persons" or "Safe for hot work", as applicable. The certificates are to be displayed in

- full view close to the entrance to the compartment. The Contractor must keep those certificates valid for the entire period where a tank is open.
- 1.4.6 All tanks and pipe tunnels open for inspections and tests must be cleaned and subject to a final inspection by the technical authority (TA) prior to closure.
- 1.4.7 The contractor and its employees will not have access to crew stations or to the vessel's sanitary facilities. The contractor must provide the necessary amenities for its employees and sub-contractors.

1.5 Access to the workplace

- 1.5.1 The contractor must ensure that the technical authority and CCG staff has unrestricted access at all times to the workplace throughout the duration of the contract.

1.6 Workplace Hazard Material Information System (WHMIS).

- 1.6.1 The contractor must provide the TA with the Material Safety Data Sheets (MSDS) for all the products it supplies that are controlled under WHMIS.
- 1.6.2 The TA will allow the contractor access to the MSDS for all controlled products on board the vessel for all work items specified.

1.7 Tobacco in the workplace

- 1.7.1 The contractor must ensure compliance with the *Non-smokers' Health Act*. The contractor must ensure that each employer and any person acting on behalf of an employer ensure that they refrain from smoking in workplaces under the employer's control. The contractor must ensure that absolutely no person smokes on board the vessel.

1.8 Healthy and safe workplace

- 1.8.1 Before the contractor begins work on the vessel, the TA and the contractor's quality assurance representative must inspect the areas where the work will take place, including access ways. The contractor's quality assurance representative must take digital photographs of each area in order to demonstrate that it has complied with the requirements of this document. It must then upload such photographs in JPG format to a CD or a DVD. Each photograph must be dated and indicate where on the vessel

- it was taken. Copies of the CD or DVD must be provided to the TA for reference purposes within 48 hours of the start of the contract period.
- 1.8.2 During the period of the work, the contractor must ensure the upkeep of the areas of the vessel that its staff use to access the work areas. The areas must be clean and free of debris and waste must be removed every day.
- 1.8.3 Areas that present a danger due to the work under this specification must be secured and clearly identified by the contractor. Posters must be installed to inform and protect all members of staff in accordance with the applicable requirements of the *Canada Labour Code*.
- 1.8.4 At the end of this contract, the contractor must ensure that all waste produced by the work under this specification is disposed of and that the vessel is as clean as it was before beginning the contract period.
- 1.8.5 Once all the known work has been completed and the final cleaning has been performed, the contractor's quality assurance representative must inspect all areas of the vessel where work was performed by the contractor. Any deficiency or damage noted must be recorded and compared to the photographs taken in order to determine if the deficiency or damage stems from the work performed by the contractor. If this is the case, the damage must be repaired by the contractor, at no cost to the CCG.

1.9 Fire protection

- 1.9.1 The contractor must ensure that the isolation, removal and installation of fire detection and extinguishing systems and related components are performed by a qualified technician. When fire detection or extinguishing systems are deactivated or put out of service by the contractor throughout the duration of the contract, a qualified technician must certify that they are fully functional again.
- 1.9.2 Deliverables: The original signed and dated certificate must be issued to the technical authority (TA) and to technical inspection before the end of the contract.
- 1.9.3 The contractor must inform the technical inspection and the TA and obtain written approval before disturbing, removing, isolating, deactivating, putting out of service or locking out any element of the fire detection and extinguishing systems, including heat and smoke detectors.
- 1.9.4 The contractor must provide protection against fires at all times and also while work is being performed on the vessel's fire detection and extinguishing systems. This may be performed in the manner proposed below, only after having obtained written approval from the TA:
- 1.9.4.1 put only one part of the system out of service at a time;
- 1.9.4.2 keep the system functional by using spare parts while the work is underway;
- 1.9.4.3 employ other methods accepted and approved by the TA.
- 1.9.5 The contractor must know that if all the necessary precautions are not taken during work on the vessel's fire extinguishing systems, accidental discharge of

extinguishing agent may occur. The contractor must fill and certify, at its expense, the containers or systems that are depleted due to such work.

1.10 Damaged paint and retouching

- 1.10.1 Unless otherwise indicated, the contractor must provide and apply two coats of marine primer paint compatible with the vessel's paint system on all new metal surfaces and surfaces requiring retouching immediately upon completion of work.
- 1.10.2 Before applying the first coat, the contractor must prepare all new steel structures and those that require retouching in accordance with the paint manufacturer's directions.

1.11 CCG and other employees on board the vessel

- 1.11.1 Employees of the CCG and of DFO, as well as other employees such as manufacturer's representatives, Lloyd's surveyor, could result in further work on board the vessel, including work not mentioned in this specification, during the period of work. The TA will do its utmost so that other work, related inspections and investigations do not interfere with the contractor's work. The contractor should not coordinate the related inspections or pay the inspection costs for such work.

1.12 Regulatory inspections and/or classification examination

- 1.12.1 The contractor must schedule and coordinate all regulatory inspections and classification surveys in collaboration with the authority concerned, e.g., Lloyd's Register.
- 1.12.2 All documents produced in the context of the inspections and surveys referred to above and substantiating that they have taken place (e.g., original signed and dated certificates) must be submitted to the TA.
- 1.12.3 The contractor must not substitute the TA's inspection for regulatory inspections by the Lloyd's surveyor
- 1.12.4 The contractor must give prior notice (of at least 24 hours) to the TA before the regulatory inspections or classification surveys planned so that the TA can be present for the inspection.

1.13 Results of tests and data collection

- 1.13.1 The contractor must develop a testing and trial plan including at least all of the tests and trials mentioned in the specification. This plan must be submitted to the TA for review purposes one week before the start of the work period originally planned.
- 1.13.2 Any data specific to the trials, measurements, calibration or readings must be recorded, dated, accompanied by the signature of the person who took the

- measurements, and forwarded to the technical authority and the Lloyd's register surveyor as a report in hard copy and electronic format.
- 1.13.3 The data recorded must be accurate to three decimal places (unless otherwise specified) and comply with the measurement system in place on the vessel.
- 1.13.4 The contractor must provide the TA with valid calibration certificates for all instruments used for the testing and trial plan to prove that the instruments have been calibrated in accordance with the manufacturer's instructions.
- 1.13.5 Hard copies of reports must be placed in standard three-ring binders, typewritten on letter-size paper and classified by specification number. Electronic copies must be in unprotected Adobe PDF format on CD-ROM. The contractor must provide one electronic copy of all reports.
- 1.13.6 All documents produced during the contract must be placed in a data collection then submitted to the TA at the end of the contract.
- 1.13.7 All drawings requested must be produced on ANSI format B (11 in x 17 in) paper or smaller. Three copies must be provided. Drawings must also be forwarded in DWG format (AutoCAD 2000 or more recent version), on CD-ROM, and are not to be password protected. One (1) USB key must be provided.

1.14 Material and tools provided by the contractor

- 1.14.1 The contractor must ensure that all material is new and has never been used.
- 1.14.2 The contractor must ensure that all replacement products such as sealing components, gaskets, insulation, small hardware items, oils, lubricants, degreasing solvents, preservation agents, paints, coatings, bolts and fastening materials, among others, comply with the drawings, manuals and instructions of the equipment's manufacturer.
- 1.14.3 When no particular item is specified or when a replacement must be made, the TA must approve the replacement item in writing. The contractor must give the TA details on the material used and the grade and quality certificate of the various materials before use.
- 1.14.4 The contractor must provide all equipment, devices, tools and machinery, such as welders, cranes, scaffolding and fixtures required to perform the work indicated in this specification.
- 1.14.5 The contractor must ensure services for removal of waste oil, hydrocarbons and any other hazardous waste or controlled products as part of the work planned under this specification. The contractor must provide certificates of disposal for all waste listed above.
- 1.14.6 Such certificates of disposal must demonstrate that the disposal has been completed in accordance with federal, provincial and municipal regulations in force.
- 1.14.7 All materials supplied and work carried out by Contractor shall be adequate to meet the following service conditions:

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

1.15 Material and tools provided by the government

- 1.15.1 All tools must be provided by the contractor unless otherwise specified in the technical specification.
- 1.15.2 If the TA provides tools, the contractor must return them in the condition in which they were borrowed. Borrowed tools must be inventoried. The contractor must affix its signature on the inventory statement upon receipt of the tools and when they are returned to the TA.
- 1.15.3 The contractor must keep all goods supplied by the government in a warehouse or secure storage in a controlled atmosphere, in accordance with the manufacturer's instructions.

1.16 Restricted access areas

- 1.16.1 The contractor must not enter the following areas (except to perform work in accordance with the specification): cabins, offices, workshops, engineer's office, wheelhouse, control room, toilets, kitchen, crew stations, recreation areas or other areas where restricted access is posted.
- 1.16.2 The contractor must give 24 hours prior notice to the TA when it needs to work in occupied spaces or offices. The CCG will then have sufficient time to move staff and secure the areas.

1.17 Contractor inspections and protection of equipment and the workplace

- 1.17.1 In collaboration with the TA, the contractor must coordinate an inspection of the condition and location of items to be removed before performing the work specified or accessing a location to work on it.
- 1.17.2 Any damage resulting from the contractor's work and attributable to its performance of the work must be repaired by the contractor at its own expense. Material used for replacements or repairs must comply with the criteria for the material supplied by the contractor, indicated in the section Material and tools provided by the contractor.
- 1.17.3 Contractor shall provide adequate temporary protection for any equipment or areas affected by this refit. Contractor shall take proper precautions to maintain in a proper state of preservation any machinery, equipment, fittings, stores or items of outfit which might become damaged by exposure, water infiltration, movement of materials, paint, sand grit or shot blasting, welding, airborne particles from sand grit or shot blasting, welding, grinding, burning, gouging, painting or airborne particles

of paint. Any damage shall be the responsibility of Contractor. Temporary covers must be installed on workplaces.

1.18 Records of work in progress

- 1.18.1 The TA may record work in progress by various methods, including photos, digital videos and film.

1.19 List of confined spaces

- 1.19.1 The contractor may request a list of confined spaces in the vessel at the meeting prior to the refit.

1.20 Hazardous material

- 1.20.1 The contractor must not use any material containing asbestos.
- 1.20.2 Handling of materials containing asbestos must be performed by personnel trained and certified in the removal of material containing asbestos in accordance with the federal, provincial and municipal regulations in force as well as the Fleet Safety and Security Manual. Such certificates of disposal must demonstrate that the disposal has been performed in accordance with federal, provincial and municipal regulations in force.
- 1.20.3 The contractor must not use paint containing lead.

1.21 Material and equipment removed

- 1.21.1 All equipment removed under this specification remains the property of the CCG unless otherwise noted in certain sections of the specification.

1.22 Welding certification

- 1.22.1 For any work requiring fusion welding of steel, the contractor or its sub-contractors must hold certification from the Canadian Welding Bureau (Division 2) in accordance with the most recent version of W47.1-2009 standard of the Canadian Standards Association
- 1.22.2 For any work requiring fusion welding of aluminum, the contractor or its sub-contractors must hold certification from the Canadian Welding Bureau (Division 2)

- in accordance with the most recent version of W47.2-11 standard of the Canadian Standards Association.
- 1.22.3 The contractor must provide the technical authority, before the work commences, with documents clearly indicating the welding certification for all the employees who will perform all the welding work planned in this specification.
 - 1.22.4 The contractor must present a quality assurance report. Including a welding inspection performed by a welding inspector level 2 by the CSA 178.2.
 - 1.22.5 The Contractor must perform welding work according to the Canadian Coast Guard standard.
 - 1.22.6 Canada reserves the rights to hire a third party to audit the Contractor's quality assurance program.

1.23 Electrical installations

- 1.23.1 All electrical installations and repairs must be performed in accordance with the most recent version of Standard TP127E (Transport Canada's Marine Safety Electrical Standards) and Standard 45 of the Institute of Electrical and Electronic Engineers (Recommended Practice for Electrical Installations on Shipboard).
- 1.23.2 All electronic equipment installations and repairs must be performed in accordance with the Canadian Coast Guard publication on telecommunications and electronics entitled "General Specification for the Installation of Shipboard Electronic Equipment."

1.24 Tradesmen's competence

- 1.24.1 The contractor must use qualified tradesmen, certified (where applicable) and competent and supervise them in order to guarantee a high uniform level of performance quality.
- 1.24.2 The head of inspection may ask to consult and record details of the certification or competence of the contractor's tradesmen. This request must not be exercised unduly, but is only intended to ensure that qualified tradesmen are performing the necessary work.

1.25 Contractor's crane

- 1.25.1 It is the contractor's responsibility to verify applicable load restrictions at the dock where the vessel is moored. Slings and lifting gear are to be provided by the contractor.
- 1.25.2 Contractor to include in quote the costs of any and all transportation, staging, rigging, slinging, craning, removals, and installations of parts and equipment such as may be required to carry out work.

1.26 Electric power and compressed air supply

- 1.26.1 The Contractor will have access to 120 VAC electricity and 120 psi compressed air provided by the vessel.

LIST OF ACRONYMS

CA	Contracting Authority (PWGSC)
CCG	Canadian Coast Guard
CLC	Canada Labour Code
CSM	Contractor Supplied Material
CSA	Canadian Standards Association
CWB	Canadian Welding Bureau
DFO	Fisheries and Oceans Canada
FSSM	Fleet Safety and Security Manual (CCG)
FSR	Field Service Representative
GSM	Government Supplied Material
GFE	Government Furnished Equipment
HC	Health Canada
IEEE	Institute of Electrical and Electronics Engineers
OL	Overall length
MSDS	Material Safety Data Sheet
OHS	Occupational Health and Safety
PWGSC	Public Works and Government Services Canada
SSMS	Safety and Security Management System
TBS	Treasury Board Secretariat of Canada
TCMS	Transport Canada Marine Safety
TA	Technical Authority – Owner’s Representative (CCG)
WHMIS	Workplace Hazardous Materials Information System

2 FUEL TANK ISOLATION

2.1 SCOPE

- 2.1.1 CCG took acceptance of nine new Mid-Shore Patrol Vessels (MSPV) in the past two years. The vessels operate across the country in salt, brackish and fresh water areas. The Fuel Oil system aboard the Hero Class vessels contains three storage tanks, one overflow tank, and one day tank, giving the vessels an overall fuel capacity of 34 m3. There have been and will be instances where individual tank pressure testing is required but the vessels do not currently have this capability. Modifying the as fitted design of the Hero Class fuel system is required so that isolation of each fuel oil tank can be achieved.

2.2 REFERENCE

Document	Title	Included Yes/No
Plan		
C15-49-002-02	Installation Drawing	Yes
C15-49-506-01 R1	Air pipes and sounding Diagram	yes
Publications		No
Standards		
	Lloyds Register Rules and Regulation for the Classification of Special Service Craft	No
Regulations		
	Canada shipping act 2001	No

2.3 Owner Furnished Equipment

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

2.4 TECHNICAL DESCRIPTION

2.4.1 Existing Configuration

- 2.4.1.1 Fuel oil tank #1 (storage tank), 2 and 3 (service tanks) are vented through a common 3"ND line which also act as an overflow to tank #9 (storage / overflow). The branches between the tanks connections and the common line are inaccessible due to the accommodation arrangement and the nature of the finish. Furthermore the lines are permanently assembled with welded sleeves. At one point the 3 lines are accessible above the main deck but no removable spools are fitted. Passed this point the 3 separate lines connect to the common vent and isolating a specific tank become impossible.

2.5 Scope of Work

2.5.1 General

- 2.5.1.1 The Contractor shall install ANSI class125/150 flanges to the 3 vent lines above the main deck between frame 24 and 25 according to drawing C15-49-002-02-R1.

2.5.2 Removal Preparation Work

- 2.5.2.1 The Contractor shall protect the surrounding to the TA satisfaction prior to any hot work.
- 2.5.2.2 The Contractor shall properly dispose of or store all fuel inside the tanks and associated pumps before undertaking any dismantling.

2.5.3 Equipment to be installed

- 2.5.3.1 The Contractor shall install a bilingual brass label plate securely attached in accordance with ASTM F992-86 (2006) indicating the tanks names.
- 2.5.3.2 The Contractor must account for time for the technical authority and the Lloyd's surveyor to survey the tanks, no 1, 2 and 3.

2.6 PROOF OF PERFORMANCE

2.6.1 Inspection

2.6.1.1 All work shall be witnessed by the TA or delegate and the attending Lloyd's surveyor.

2.6.2 Testing

2.6.2.1 The Contractor shall be responsible to perform a hydrostatic test of the tanks witnessed by the TA and the attending TCMS surveyor.

2.7 DELIVERABLES

2.7.1 All documentation supplied with the new equipment shall be handed to the Owner's Representative.

2.7.2 Training

2.7.3 The Contractor is responsible to give all necessary training to the Chief Engineer and engineering crew to permit them to properly understand the new vent line configuration and limitation.

3 FUEL TANK #9 VENT RECONFIGURATION

3.1 SCOPE

- 3.1.1 The Fuel Oil system aboard the Hero Class vessels contains three storage tanks, one overflow tank, and one day tank, giving the vessels an overall fuel capacity of 34 m3. The overflow tank #9 is a stepped tank by design and the vent is located at the low point of the tank. The tank is only being filled by operators up to 60% of capacity due to the placement of the vent and risk of a fuel spill. The intent of this specification is for the Contractor to manufacture and install a fuel oil air vent line to tank #9. Also. This will insure that fuel oil tank #9 will vent properly with the ability to be filled at least to 95% of its physical capacity.

3.2 REFERENCE

Document	Title	Included Yes/No
Plan		
C15-49-002-01	Tank #9 additional vent line installation	Yes
C15-49-506-01 R1	Air pipes and sounding Diagram	yes
Figure 1	Auxiliary Machine Space Port	Yes
Publications		No
CCGS-30-000-000-ES-TE-001	Coast Guard's Color Coding Standard for Piping System	Yes
Standards		
	Lloyds Register Rules and Regulation for the Classification of Special Service Craft	No
Regulations		
	Canada shipping act 2001	No

3.3 Owner Furnished Equipment

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

3.4 TECHNICAL DESCRIPTION

- 3.4.1.1 The Contractor must account for time for the technical authority and the Lloyd's surveyor to survey the tanks, no 9.
- 3.4.2 Existing Configuration
 - 3.4.2.1 The Fuel Oil #1 (storage tank), 2 and 3 (service tanks) are vented through a common 3"Nominal Diameter (ND) line which also acts as an overflow to tank #9 (storage / overflow). The connection to tank #9 is at the lowest point of the steeped tank top just aft of frame 9. Tank #9 is vented through a 4"ND line also at the lowest point of the tank top. Day tank #8a vent / overflow is connected to the tank #9 vent (2"ND). To be able to use the #9 tank as overflow tank it must be the last one to be filled. The #9 tank vent connection is at 1425mm above the base line where the highest point of the tank is at 1698mm. Therefore an air pocket is created in the highest part of the tank.

3.5 Equipment to be removed

- 3.5.1 Disassembly of Conflictual Items:
 - 3.5.1.1 Where the arrangement of a particular vessel is conflictual with the proposed routing, repositioning of the items could be discussed with TA only where the air pipe efficiency is compromised.
 - 3.5.1.2 Where disassembly of conflictual item has been approved by TA, The Contractor shall remove, protect and store the item in accordance with General Note #18 until further re-installation.
 - 3.5.1.3 The Contractor shall re-install any removed item at the TA approved location with new hardware (contractor supplied) after work completion.
- 3.5.2 Removal Preparation Work
 - 3.5.2.1 The Contractor shall protect the surrounding systems including but not limited to the electrical power and control cable, hydraulics systems, and exhaust pipes to the TA satisfaction prior to any hot work.
 - 3.5.2.2 The Contractor shall properly dispose of all fuel inside the tanks and associated pumps and piping before undertaking any dismantling.
 - 3.5.2.3 All the piping to and from the tank shall be isolated up to the closest point, cleaned and blanked off for their further re-connection.

3.6 Scope of Work

3.6.1 General

3.6.2 The Contractor shall install a second vent line at frame 2 according to drawing C15-49-002-01. This position is at the highest possible point of the tank. The vent should be routed on portside and through the bulkhead at frame 4 along the exhaust lines through the auxiliary engine room and connect to the actual vent line between frame 8 and 9. The vent should be routed so that it does not interfere with the maintenance of the equipment.

3.6.3 The Contractor must have a quality assurance for the welding performed. That must be performed by a welding inspector certified CSA 178.2 level 2 for visual and Non destructive testing must be performed by personnel certified by CAN/CGSB-48.9712-2014 for die penetrant testing.

3.7 Routing Validation

3.7.1 Considering the nine vessels have been organized for their particular operations, the arrangement may be slightly different from one another. Prior to any work onboard

the Contractor shall validate the routing of the vent line. Where it is required the Contractor shall adapt this routing to the TA's satisfaction.

3.8 Piping

- 3.8.1 The contractor shall install the pipes in accordance with Dwg. C15-49-002-01-Rev1.
- 3.8.2 The contractor shall identify the pipe as per Coast Guard's Color Coding Standard for Piping System. CCGS-30-000-000-ES-TE-001.

3.9 PROOF OF PERFORMANCE

- 3.9.1 Inspection
 - 3.9.1.1 All work shall be witnessed by the TA or delegate and the attending Lloyd's surveyor.
- 3.9.2 Testing
 - 3.9.2.1 The Contractor shall be responsible to perform a pressure air test of tank #9 witnessed by the TA and the attending Lloyd's surveyor.
 - 3.9.2.2 A non destructive test of die penetrant must be perform on the welds related to the fuel tank.
 - 3.9.2.3 The contractor must note the arrangements to isolate the no 9 tank to be able to perform the pressure test. It is acceptable to Canada to include the day tank in the pressure test and isolate both tanks for the pressure test. Entry in the day tank will be required to perform the isolation and safe entry measures will need to be taken.
 - 3.9.2.4 The Contractor must disassemble the tank level gauge before the test and assemble it after the completion of the test.
 - 3.9.2.5 The Contractor must carry out the pressure test in the tank and in its vent for a one hour period, with the compressed air feed disconnected. A calibrated pressure gauge must be connected to monitor the tank pressure at all time. The maximum test pressure must be of 3 psi.
 - 3.9.2.6 The Contractor must replace every gaskets or joints where a pipe is taken apart during the test related work with new gaskets and joints of Garlock type or equivalent. The Contractor must also replace the manhole gasket with the grade as those removed.
 - 3.9.2.7 The Contractor must bid for 10 men hours to account for the correction leaks other than the leaks on the vent. The leaks must be shown to the TA before the work commence.

3.10 DELIVRABLES

- 3.10.1 Documentation
 - 3.10.1.1 All documentation supplied with the new equipment shall be handed to the Owner's Representative.
 - 3.10.1.2 The Contractor must provide a quality assurance report for the welding performed.

3.10.1.3 The Contractor must record the room temperature during the pressure test, the duration of the test and the test pressure at the beginning and at the end of the test and any related remarks.

3.11 Training

3.11.1 The Contractor is responsible to give all necessary training to the Chief Engineer and engineering crew to permit them to properly understand the new vent line configuration and limitation.



Figure 1: vent line installed in the steering compartment



Figure 2: vent line Steering 2



Figure 3: support bracket for vent line Fr 5

4 ADDITION OF A SPLASH GUARD FOR TRANSFORMER BANKS

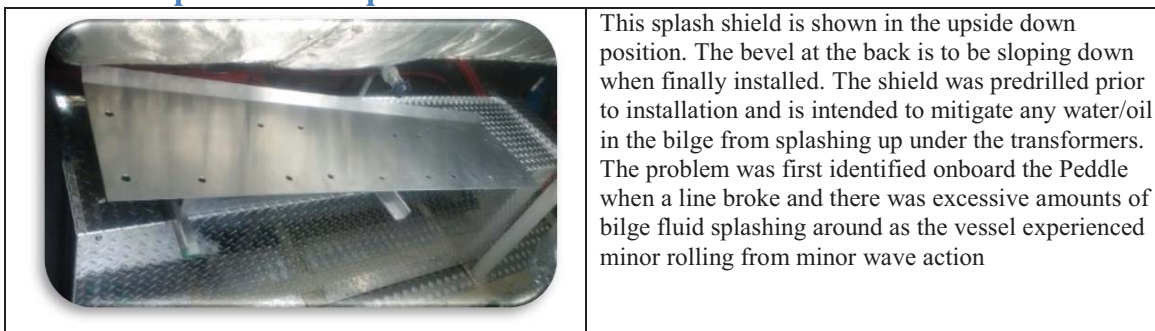
4.1 Scope

- 4.1.1 The purpose for the shields is to provide IP44 or equivalent ingress protection and at the same time, not inhibit natural transformer cooling action. The Delta OEM was contacted and the requirement to avoid additional cooling and temperature monitoring was to ensure that there was at least a 6 inch clearance between the front and rear of the transformer and any shields being installed. This requirement was met and CCG has installed shields on the main switchboard, emergency switchboard and shore power transformers.
- 4.1.2 Due to weight issues 1/8" checker plate aluminum material was chosen for this application. The Contractor must note that the guidance drawings ask for 3/16" plate and Canada wants 1/8" material. It should be noted that the drawings being provided are to be used as a guide only. Based on experience gained during the shield installation onboard the McLaren and G Peddle there are minor differences that make it impossible to generate a "one size fits all" drawing. This discussion will start with the install in the AMR space and move forward from there.
- 4.1.3 I would suggest that the shields be removed at least once every two or three years for inspection and maintenance. The transformer bank most susceptible to copper corrosion would be the emergency generator installation as the bank is located directly in front of a major air intake vent.

4.2 Reference

J16061-S01_R0 Transformer Shields.dwg
J16061-S01_R0 Transformer Shields sheet 1.pdf
J16061-S01_R0 Transformer Shields sheet 2.pdf
J16061-S01_R0 Transformer Shields sheet 3.pdf
J16061-S01_R0 Transformer Shields sheet 4.pdf

4.3 Description technique



The transformers must be raised slightly to enable the installation of the splash shield. Also, before the checker plate shields are installed the temporary hood style shields presently mounted on the transformer fronts must be removed to permit proper ventilation.



To raise the transformers slightly two end supports must be fabricated and a piece of square channel is used for the backbone. The pic to the left shows the aluminum support for the forward end. This support sets on the deck and several ratchet tie downs are used to strap the support to the upright stanchion shown in the pic.

This pic shows the aft support. As there is room at this end of the transformer installation the support straddles the transformer bed. the base of the support is a T and simply sets in place. The front end of the transformer bed does not have sufficient room to utilize the same support design.



Once the two end supports and strong back is in place you simply remove the transformer securing bolts and use wide ratchet straps to rise the transformers approx. ½ inch which will allow the splash shield to slip into place. Care must be take to raise and lower the transformers simultaneously so as not to damage the conduit connections between the transformers. Transformers must be powered down to complete this task.

4.3.1 This lifting approach works well in this tight area and can be utilized for both transformer banks in the AMR space.

5 REPORT OF WEIGHT ADDED AND REMOVED

5.1 SCOPE

- 5.1.1 Ships of the MSPV type are sensitive to weight additions. Materials added must be marked as well as the elements removed

5.2 TECHNICAL DESCRIPTION

- 5.2.1 The Contractor must weigh all the equipment that is added to the ship and this by specification item. The Contractor must also weigh all items that are removed from the vessel

5.3 DELIVERABLE

- 5.3.1 A report must be given to the technical authority.

6 TANK INSPECTION

6.1 Scope

The purpose of this work is to open and clean the tank for a five year survey inspection of the tank.

6.2 List of Tanks

Table 1: Fuel Tank list

Tank no	Tank name	Frame Aft	Frame Fwd	Net Volume	Private Robertson	Constable Carriere	Corporal Teather
Fuel Tank							
Tk 1	FO Storage Tank	26.00	31.00	8.835	1.2	0.419	0.731
Tk 2	FO Service Tk Port	18.00	25.00	10.265	9.2	6.903	8.417
Tk 3	FO service tank Stbd	18.00	25.00	10.265	7.8	6.647	5.672
Tk 8A	FO Day tank	8.50	9.00	1.261	1	0.897	1.000
Tk 9	FO Storage Overflow Tk	2.00	9.00	8.488		0.073	0.100
Gasoline							
Tk 13	Gasoline tank Port	1.54	2.96	1.328	.08	onshore - 0	0
Tk 14	Gasoline tank Stbd	1.54	2.96	1.328	.08	onshore - 0	0.052
Fresh Water							
Tk 11	Fresh water tk Port	26.75	31.00	3.206	2.5	in use	3.1
Tk 12	Fresh water tk Stbd	26.75	31.00	3.206	2.5	in use	3.1
Lube Oil							
Tk 5	LO Storage Tk ME	14.00	15.00	0.638	.150	0.15	0.245
Miscellaneous							
Tk 4	Bilge Water Tk	15.00	17.00	1.619	0	0.6	0.082
Tk 6	Sewage Sludge Tk	12.60	13.00	0.575	0	0.135	0.079
Tk 7a	Grey Water Tank	9.00	12.00	3.994	0	in use	0.51
Tk 7b	Black Water Tk	12.00	12.50	0.629	.02	in use	0.01
Tk 15	Dirty Oil & Sludge	13.00	15.00	2.541	0	0.55	0.044
Ballast Water							
Tk 16	Ballast Water Tk Stbd	Aft	1.00	1.495	0	0	0
Tk 17	Ballast Water Tk Port	Aft	1.00	1.495	0	0	0
	Emergency Generator tk					0.35	0.350

6.3 Optional Non destructive testing

- 6.3.1 The ultrasonic thickness measurements on chosen structures must be performed under the on site surveyor.
- 6.3.2** The Contractor must provide the services of a firm specialized in non-destructive (ultrasonic) tests in order to perform the thickness measurements on all spots of the hull plating and the internal structures designated by the classification society. The hired firm must be independent from the Contractor and uses equipment and measurements methods approved by the classification society.
- 6.3.3 Optional : The Contractor must quote for the pressure testing of the tank, this work will be performed if the Lloyd's surveyor request it (this doesn't affect the work requested regarding the tanks where worked is perform according to previous sections of the text).
 - 6.3.3.1 Pressure testing the tank must be witnessed by the Lloyd's surveyor and the technical authority.
 - 6.3.3.2 The Contractor must disassemble the tank level gauge before the test and assemble it after the completion of the test.
 - 6.3.3.3 The Contractor must carry out the pressure test in the tank and in its vent for a one hour period, with the compressed air feed disconnected. A calibrated pressure gauge must be connected to monitor the tank pressure at all time. The maximum test pressure must be of 3 psi.
 - 6.3.3.4 The Contractor must replace every gaskets or joints where a pipe is taken apart during the test related work with new gaskets and joints of Garlock type or equivalent.

6.4 Fuel Tanks

6.4.1 Scope

- 6.4.1.1 There are six fuel oil tanks to be cleaned and opened for inspection. This inspection is aimed at verifying the steel condition in the tanks.

6.4.2 Access to tank 1

The Contractor must move a desk in the forward cabin on the lower deck. A trap in the deck allows access to the fuel tank. Both Port and Stbd cabins have desk covering the access traps for the manholes to fuel tank no 1.

6.4.3 Access to Tank 2 and 3

The Contractor must move desks in the mid cabins on the lower deck to reach the access traps to the manholes. Tank no 2 is accessed through the port cabin and tank no 3 through the stbd cabin.

6.4.4 Access to Tank 8

The Contractor can access the manhole for the no 8 in the auxiliary machine room.

6.4.5 Access to Tank 9

The Contractor can access the manhole by removing a deck plate in the auxiliary machine room and the steering compartment.

6.4.6 The Contractor can access the manhole inside the emergency generator room.

6.4.7 Preparation

- 6.4.7.1 The contractor must empty and open the tanks. The tanks must be vented and certified safe for entry.

- 6.4.7.2 The tanks must be wiped clean. The contractor must allow for the amount of liquid stated in Table 1: Fuel Tank list to dispose, not including the cleaning media used.

- 6.4.7.3 Ship's crew can transfer internally the fuel except for the private Robertson where an external storage will be required.

- 6.4.7.4 The Contractor must account for 100 liters of liquid left in the tank once it is pumped out with the ship's pump.

6.4.8 Cleaning and Inspection

- 6.4.8.1 All the internal tank suction must be cleaned. The striking plate under the sounding tube must be inspected. The contractor must ensure that all vents, suction and filling lines are clear.

6.5 Gasoline Tank

6.5.1 Access to Tank 13 and 14

These are jettisonable tanks on the aft deck.

6.5.2 Preparation

6.5.2.1 The contractor must empty and open the tanks. The tanks must be vented and certified safe for entry.

6.5.2.2 The tanks must be pressure washed and wiped clean. The contractor must allow for the amount of liquid stated in Table 1: Fuel Tank list to dispose, not including the cleaning media used.

6.6 Lube oil Tank

6.6.1 Access to Tank 5

The Contractor can reach the manhole for tank no 5 in the bilge in front of the stbd main engine.

6.6.2 Preparation

6.6.2.1 The contractor must store the content in clean containers for the duration of the work and pump it back into the tank after the tank is surveyed by the Lloyd's surveyor. The Contractor must open the tank. The tanks must be vented and certified safe for entry.

6.6.2.2 The tanks must be wiped clean. The contractor must allow for the amount of liquid stated in Table 1: Fuel Tank list to dispose, not including the cleaning media used.

6.7 Ballast Tanks

6.7.1 Access to Tank 16 and 17

6.7.1.1 The Contractor must go through the steering compartment to see access the manholes for tanks 16 and 17.

6.7.2 Preparation

6.7.2.1 The Contractor must open the tank. The tanks must be vented and certified safe for entry. The Contractor must pressure washed and wiped clean the tank.

6.7.3 Cleaning and Inspection

6.7.3.1 All the internal tank suction must be cleaned. The striking plate under the sounding tube must be inspected. The contractor must ensure that all vents, suction and filling lines are clear.

6.8 Fresh Water Tanks

6.8.1 Access to Tank 11 and 12

6.8.1.1 The Contractor can access to the water tanks is through the showers in the washrooms on the lower deck by removing a piece of paneling. For both port and Stbd tanks.

6.8.2 Identification

6.8.2.1 The two fresh water tanks, port and starboard, must be cleaned, inspected and the tanks coating must be touched up as optional work.

6.8.2.2 The work must meet Health Canada Guidelines for Canadian Drinking water Quality.

6.8.2.3 The tanks are of a 3.2 cubic meter each.

6.8.2.4 The Contractor must give timeline for an optional coating repair.

6.8.3 Reference

6.8.3.1 The existing liner is International Paint Interline 975P this product must be used for repairs.

6.8.4 Drawings

Drawing number	Description
AF6101-89940-02	Tank Arrangement and Capacity plan
AF6101-53000-02	Sanitary Fresh Water system
AF6101-63100-01	Paint Schedule

6.8.5 Manual

Name	Description
	MSPV International Coatings Maintenance Plan OBM
7.A.12	Fleet Safety manual Section 7.A.12- Potable Water Quality
http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/sum_guide-res_recom/index-eng.php	Health Canada Guidelines for Canadian Drinking water Quality
Interline 975P	Application Guidelines Potable Water Tanks Interline 975P

6.8.6 Technical

- 6.8.6.1 The contractor must empty and open the water tanks. The tanks must be vented and certified safe for entry.
- 6.8.6.2 The tanks must be pressure washed and wiped clean. The contractor must allow for 100 Liters of liquid waste, not including the cleaning media used.
- 6.8.6.3 All the internal tank suction must be cleaned. The striking plate under the sounding tube must be inspected. The contractor must ensure that all vents, suction and filling lines are clear.
- 6.8.6.4 The Contractor must use the service of a NACE inspector to advise for surface preparation and coating application as per the attached International Paint Q.C. document: Application Guidelines Potable Water Tanks, Interline 975P. Every precaution must be taken to ensure there is no solvent added, to avoid Ethylbenzene contamination.
- 6.8.6.5 The contractor must quote on preparation and repair of 6 m² total in 30 distinct areas, to be power tooled to SSPC-SP11, and the edges to be feathered as per the On board maintenance plan for hero class vessels specification. Note: "Area" includes feathering zone.
- 6.8.6.6 The contractor must use the product recommended by the Coating Manufacturer and adhere exactly to the application procedures stated in the coating application documentation. The use of thinners is not acceptable; all curing between coats and ventilation requirements must be adhered to and documented. New hoses must be used for the application of paint in the Potable Fresh Water Tank. Hoses must not be flushed with thinner and then reused for the potable water tank. The work schedule for tank coating must provide drying times consistent with the paint manufacturer's recommendations for fresh water tanks.
- 6.8.6.7 The tanks must be closed up after inspection by Lloyd's and the TA. New nitrile (or neoprene) gaskets must be used. The TA must witness the hardening up of all manholes, and closures.

6.9 (Optional)Heating

- 6.9.1 The Contractor must install a heating system that will allow the inside of the tanks to be at a consistent 15 degree, within 5 degrees of 15 degrees Celsius. Records of temperatures must be taken each morning during the period the heating system is in place.
- 6.9.2 The Contractor must account for heating for the duration of the curing period of the paint at the given temperature.

6.10 Proof of Performance

6.10.1 Inspection Points

- 6.10.1.1 Once all work has been completed and the tank is cleaned of all debris and work by-products, the contractor arrange for inspection and survey of the potable water tank by the TA and Lloyd's surveyor.

6.10.2 Testing/Trials

- 6.10.2.1 The Potable Water tanks and the ship's fresh water system must be super-chlorinated in accordance with the procedures laid out in the Coast Guard Fleet Safety Manual procedure Potable Water Quality 7.A.12. On completion of super-chlorination the tanks must be drained and flushed twice before being returned to service. The contractor must be responsible to dispose of all water used to treat the fresh water tanks, allowing for 3.25 m³ per fill for each of the 2 tanks, including de-chlorination of the super-chlorinated water.
- 6.10.2.2 The contractor must arrange for testing of potable water tank and system in accordance with the Annual Testing of Potable Water as specified in the Canada Drinking Water Guidelines as prescribed by Health Canada. To verify this, the following procedure must be followed for each tank:
- 6.10.2.3 The tanks must be filled with fresh water, super-chlorinated, de-chlorinated and then drained in accordance with the CCG Fleet Safety manual (FSM) Potable Water Quality Guidelines contained in section 7.A.12 prior to filling for testing.
- 6.10.2.4 The potable water distribution system must be super chlorinated as per FSM. The main charcoal media filter must be bypassed and locked out while system

super chlorination takes place. Refer to AF6101-53000-02, Sanitary Fresh Water system.

6.10.2.5 The tank must be filled with potable water to approximately fifty percent of the working volume of the tank.

6.10.2.6 The tank must be allowed to remain stagnant for forty eight hours before samples are taken.

6.10.2.7 One (1) blank water sample must be collected from the freshwater supply line used to fill the tank.

6.10.2.8 Two water samples must be taken from the water inside the tank.

6.10.2.9 Samples from the distribution system must be taken in accordance with Fleet Safety Manual.

6.10.2.10 The water samples listed above must be sent to an accredited laboratory for analysis. The water samples must be tested using the 28 parameters described in the fleet safety manual paragraph 3.6F de la section 7.A.12 .Results must be provided immediately to the TA. All parameters must be within the Health Canada Guidelines for Canadian Drinking water Quality.

6.10.2.11 The Water samples listed above must be tested for Volatile Organic Compounds and the results must not indicate the presence of any for the work to be acceptable.

6.10.3 Certification

6.10.3.1 The contractor must obtain water test reports from the laboratory.

6.10.4 Documentation

6.10.4.1 The contractor must include all test reports in their final documentation. The contractor must provide evidence of acceptable tank water quality; prior to acceptance of the potable tank refit work by the CCG. The super chlorination and testing must be completed near the end of the work period

6.11 Miscellaneous Tanks (SEWAGE SLUDGE AND BLACK WATER TANKS)

6.11.1 Identification

6.11.1.1 The sewage sludge (tk 6), Black water(7b), Grey water(7a), Bilge water(tk4) and dirty oil and sludge(tk 15) tanks must be cleaned, inspected by Lloyd's register surveyor. The tanks coating to be touched up and pressure tested as optional work.

6.11.2 Access to tank 4

The Contractor can reach the manhole for tank no 4 in the engine room under a deck plate.

6.11.3 Access to Tank 15

The Contractor must go through the bilge forward of the main engines.

6.11.4 Access to Tank 6

The Contractor must go through tank 15 to reach the manhole for tank 6.

6.11.5 Access to Tank 7a

The Contractor must take go through the aft side of the engines the manhole is accessible in the bilge. Access is illustrated in figure 1 through 3.

6.11.6 Access to Tank 7 b

The Contractor must go through 7a to access the manhole to tank 7b.

6.11.7 Reference

6.11.7.1 Drawings

Drawing number	Description
AF6101-89940-02	Tank Arrangement, Capacity Plan

6.11.8 Manual and photos

Name	Description
	MSPV International Coatings Maintenance Plan OBM



Figure 4: Location of the manhole for used Dirty oil and sludge tank (Tk 15)

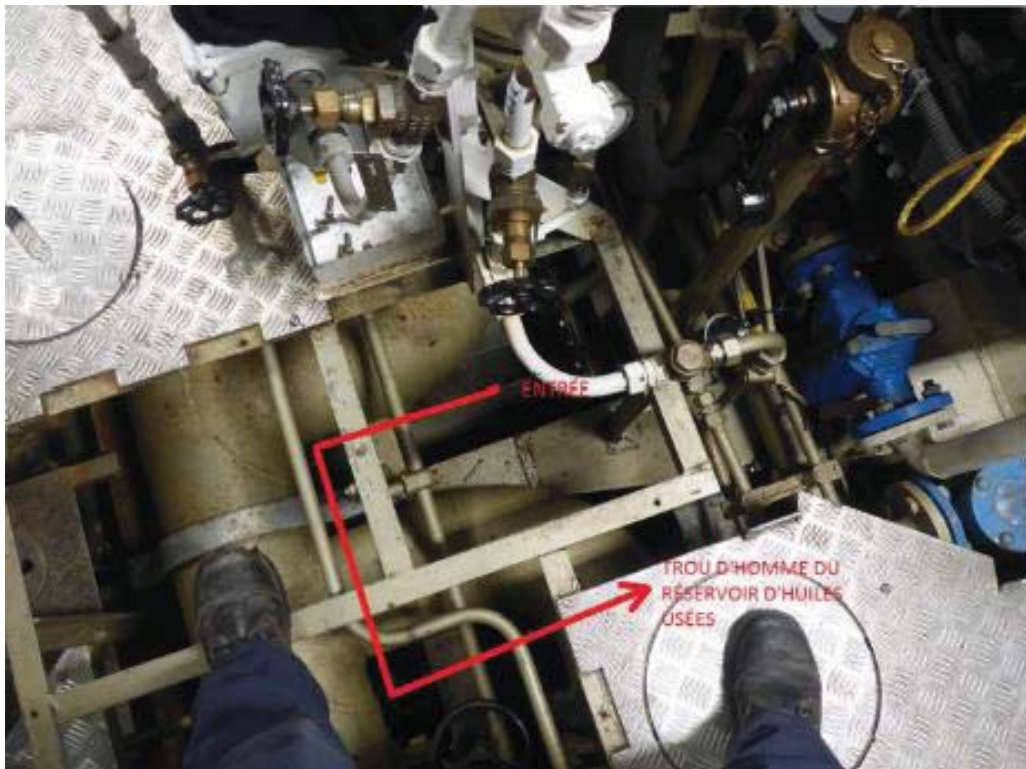


Figure 5: Location of the path to access the manhole for used oil tank

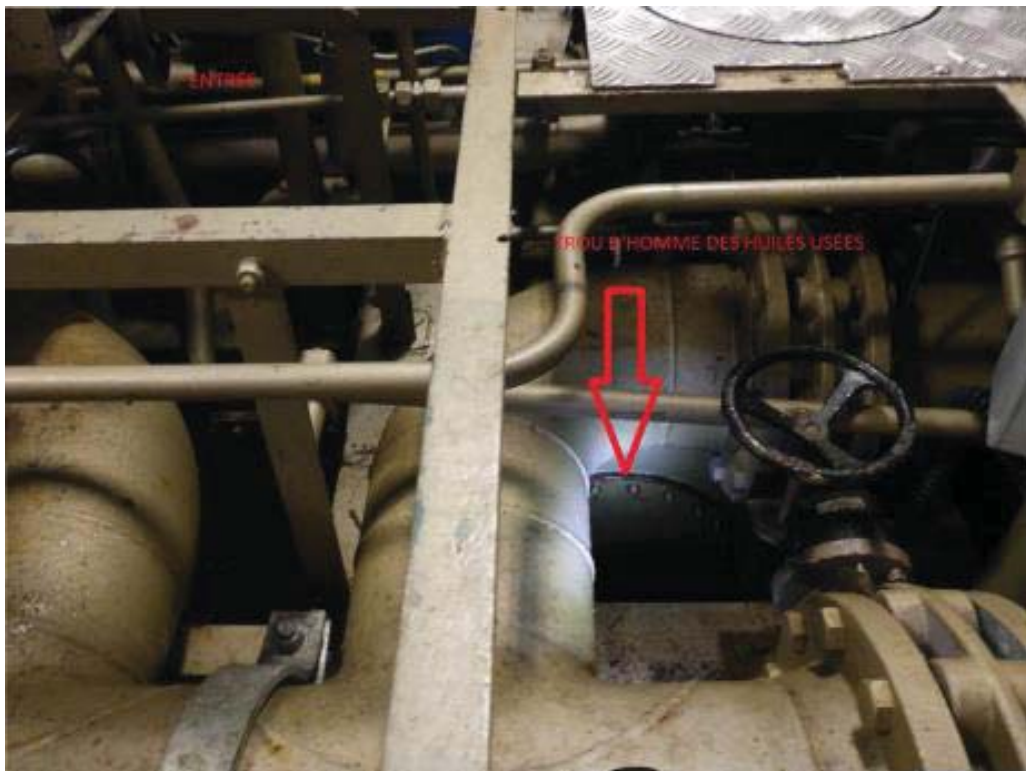


Figure 6: manhole for used oil tank

6.11.9 TECHNICAL

- 6.11.9.1 The Contractor must give the chief engineer a 24 hour notice before needing the sewage system to be powered down and isolated for the work on the sewage sludge tank, and Black water tank.
- 6.11.9.2 The Contractor must open the manhole, pump dry, clean, ventilate the tank and certify safe for entry the tanks for the duration of the work inside.
- 6.11.9.3 The Contractor must dispose of the oil and sludge remaining in the Dirty Oil & Sludge tank (#15). The estimated amounts are in Table 1: Fuel Tank list and the Contractor must account for the disposal of 20 liters per tank of solid waste these amount, liquid and solid will be adjusted to the prorated amount found in the tanks.
- 6.11.9.4 The contractor must clean the tanks mentioned above with a pressure wash system of at least 5000 psi and wipe clean.
- 6.11.9.5 The Contractor must remove the suction pipe from all five tanks. Each pipe is connected to a flange. The pipes must be cleaned, inside and out, with a water pressure system with at least 5000 psi. The contractor must inspect these pipes for corrosion and advise the Technical authority if any defect is detected.
- 6.11.9.6 The contractor must install the five pipes with new Garlock style gaskets.
- 6.11.9.7 If required and after any required structural work, the Contractor must prepare the surfaces to be painted in compliance with the manufacturer's specification. The Contractor must quote for the preparation and painting of 10 specific areas of 0.2m by 0.2m total in the sewage sludge tank and the black water tank
- 6.11.9.8 The three tanks must be inspected by the Lloyd's surveyor and the TA for structural damages and quality of the paint coating.
- 6.11.9.9 The studs retaining the manhole to the black water are to be removed; contractor to bid considering each stud is currently welded in place. The studs are to be renewed with carbon steel studs grade 8 made long enough to have a double nut that will hide the entire length of the studs thread and welded in place. The Contractor will coat the end of the studs with never seize type product. Figure 7 shows the manhole.



Figure 7: manhole to the black water tank inside the the grey water tank

6.12 Paint touch-up

- 6.12.1 The Contractor must make sure that all required paint work follows the coating manufacturer's specification.

6.13 PROOF OF PERFORMANCE

- 6.13.1 The Contractor must coordinate the Lloyd's Surveyor inspection and advise the Technical Authority when the tanks and their coatings are ready for inspection.
- 6.13.2 The tanks must be closed up after inspection by Lloyd's and the TA. New nitrile (or neoprene) gaskets must be used. The Technical Authority must witness the hardening up of all manholes, and closures. The Contractor must keep a record of all manhole hardening witnessed by the Technical Authority.

6.14 DELIVERABLES

- 6.14.1 The Contractor must submit to the TA a written report of temperature and humidity measurements and curing time for the paint application as required.
- 6.14.2 The Contractor must submit an inspection report of each tank that was inspected.