

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Réception des soumissions - TPSGC / Bid
Receiving - PWGSC
1550, Avenue d'Estimauville
1550, D'Estimauville Avenue
Québec
Québec
G1J 0C7

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

Title - Sujet PIERRE RADISSON - REFRIGERATION	
Solicitation No. - N° de l'invitation F3019-14N719/A	Date 2015-04-02
Client Reference No. - N° de référence du client F3019-14N719	
GETS Reference No. - N° de référence de SEAG PW-\$QCL-037-16394	
File No. - N° de dossier QCL-4-37316 (037)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2015-05-15	Time Zone Fuseau horaire Heure Avancée de l'Est HAE
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Woods, Michael	Buyer Id - Id de l'acheteur qcl037
Telephone No. - N° de téléphone (418) 649-2715 ()	FAX No. - N° de FAX (418) 648-2209
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: PÊCHES ET OCÉANS CANADA-GARDES CÔTIÈRES NGCC PIERRE RADISSON-MACHINE 101 BOULEVARD CHAMPLAIN QUEBEC Québec G1K7Y7 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

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

Issuing Office - Bureau de distribution

TPSGC/PWGSC
601-1550, Avenue d'Estimauville
Québec
Québec
G1J 0C7

Delivery Required - Livraison exigée VOIR DOC	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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CCC No./N° CCC - FMS No/ N° VME

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PART 1 - GENERAL INFORMATION

1.1 Introduction

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

- Part 1** General Information: provides a general description of the requirement;
- Part 2** Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation and states that the Bidder agrees to be bound by the clauses and conditions contained in all parts of the bid solicitation;
- Part 3** Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;
- Part 4** Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, if applicable, and the basis of selection;
- Part 5** Certifications: includes the certifications to be provided;
- Part 6** Security, Financial and Other Requirements: includes specific requirements that must be addressed by bidders; and
- Part 7** Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Requirement, the Basis of Payment and other annexes.

1.2 Summary

- (i) The requirement is:
- a) to carry out the scope of work regarding the Canadian Coast Guard Ships (C.C.G.S.) Pierre Radisson in accordance with the associated Technical Specifications detailed in the Requirement attached as Annex A. The ship will be in the Port of Québec for work to be carried out.
- b) to carry out any approved unscheduled work not covered in paragraph a) Above.
- c) The requirement is exempt from the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), Annex 4 and the North American Free Trade Agreement (NAFTA), Chapter 10 Annex 1001.2b Paragraph 1, however, it is subject to the Agreement on Internal Trade (AIT).

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PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the Standard Acquisition Clauses and Conditions 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 (2014-09-25) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.2 Submission of Bids

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

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than **seven (7)** calendar days before the bid closing date. Enquiries received after that time may not be answered.

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

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 the Province of Quebec.

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 Bidders' Conference (Not mandatory)

A bidders' Conference chaired by the Contracting Authority will be convened on board vessel CCGS Pierre Radisson at 1000, 5th May 2015. The ship will be at the Port of Montreal section 24 for work to be carried out.

It is recommended that the Bidder or a representative of the Bidder attend the Bidders' Conference in order to review the Scope of the Work required and to receive additional information and clarifications. Bidders are to communicate with the Contracting Authority prior to the conference to confirm attendance. Bidders that do not attend are not precluded from submitting a bid. Bidders are to provide the Contracting Authority with the names of their representatives no later than two days prior to the conference. The Contracting Authority will have an attendance form which is to be signed by the Bidder's representative(s) in attendance. Bidders are advised that any clarifications or changes resulting from the Bidder's conference and/or the subsequent viewing of the vessel, shall be included as an amendment to the bid solicitation document.

2.6 Viewing - Vessel (Not mandatory)

A site visit will be held immediately after the bidders' conference on 5th May 2015 for possible contractors.

2.7 Term of Contract

The period of the Contract is from date of Contract up to the end of the warranty period.

2.7.1 Work Period

Installation work is to commence and to be completed during the Work Period as follows:

Start of work: October 12th, 2015
End of work: December 24th, 2015

The Bidder agrees through submission of its response to the bid solicitation that the above time frame provides an adequate period to perform the subject work and absorb a reasonable amount of unscheduled work; and further, that they have sufficient material and human resources allocated or available to complete the subject work and a reasonable amount of unscheduled work within the Work period.

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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:	Management Bid
Section II:	Technical Bid (3 hard copies)
Section III:	Financial Bid (1 hard copies)
Section IV:	Certifications (1 hard 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>). 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: Management Bid

The Management Bid should be concise and should include all the certifications and other requirements as noted in Parts 4 and 6.

Section II: Technical Bid

In their technical bid, bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability in a thorough, concise and clear manner for carrying out the work.

The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

In their bid, bidders must describe their capability and experience, the project management team and provide client contact(s).

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Section III: Financial Bid

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

1.2 Exchange Rate Fluctuation

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

Section IV: Certifications

Bidders must submit the certifications required under Part 5.

3.1.2 SACC Manual Clause

C0417T (2008-05-12) Unscheduled Work and Evaluation Price

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 Mandatory Criteria

Bids will be assessed in accordance with the entire requirement of the bid solicitation including compliance with the mandatory certifications and table of deliverable requirements as detailed in Parts 2, 4, 5 & 6. Only those bids which are found to meet all the mandatory requirements within the specified time frames will be deemed responsive.

4.1.2 Table of Mandatory Requirements to be met by bid closing

Notwithstanding deliverable requirements specified anywhere else within this solicitation and its associated Technical Specification, the following are the only mandatory deliverables that must be submitted with the Bid at the time of bid closing. The following are mandatory and the Bidder must be compliant on each item to be considered responsive

Item	Description	Completed and Attached
1	Completed Annex "I" Financial Bid presentation Sheet	
2	Completed Appendix 1 to Annex "I" <u>Pricing Data Sheets</u>	
3	Letter or proof of Insurance as per article 6. 13 of Part 6	

4.1.3 Other information upon request only

The following information, which supports the bid, may be requested by the Contracting Authority from the bidder and it must be provided within **two (2)** working days of the written request:

Item	Description	Completed and Attached
1	Proof of welding certification, as per clause 6.7 of Part 6;	Prior to contract award

4.1.4 Deliverables after Contract award

Élément	Description	Doit être fourni après l'attribution du Contrat, dans les
1	Insurance Requirements as per article 7.11, Part 7	5 calendar days

4.1.5 Technical Evaluation

Mandatory technical criteria and point rated technical criteria are included in Table 1 below. The **mandatory** technical criteria and point rated technical criteria will be evaluated from the similar projects. Similar projects means:

1 - A ship's refrigeration modernization project worth \$ 150,000.00 CAD or more; and

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2 - A Ship's cargo or domestic refrigeration modernization.

For each similar projects bidders must provide at least the following information:

- Title of the project;
- Project Value;
- Capacity characteristics in terms of load capacity and flow passages (vehicules or people);
- Project description and photo(s) of the final result;
- Name of the user/customer, including name, telephone number and email of a contact person who can confirm the informaion; and
- Exact dates of the project (month and year of start and end / delivery).

If the information provided is not sufficient to confirm the relevance of the project achieved in relation to the above requirements, the bid will be declared non-responsive.

A verification with the user of the project in reference to attest the accuracy of the information could be made. If the user is not available or refute the information provided by the bidder, the bid will be declared non-responsive.

Table 1: Evaluation criteria - Mandatory and point-rated technical criteria

Evaluation Criteria	Mandatory Criteria	Point Rated Criteria
1- Relevant business experience	The firm must have completed at least 1 similar project in the past 5 years.	The company has completed 1 similar project in last 5 years = 1 point The company has completed 2 similar projects in last 5 years = 3 points The company has completed 3 similar projects in last 5 years = 5 points
Relevant experience of the work team		
2- Experience of the project manager	Must have completed a minimum of 1 similar project as a project manager during the last 5 years.	Has completed 1 similar project as a project manager during the last 5 years = 5 points Has completed 2 similar projects as a project manager during the last 5 years = 10 points Has completed 3 similar projects, or more, as a project manager during the last 5 years = 15 points
3- Experience of the engineer	Must have completed a minimum of 1 similar project as an engineer during the last 5 years.	Has completed 1 similar project as an engineer during the last 5 years = 2 points Has completed 2 similar projects as an engineer during the last 5 years = 6 points Has completed 3 similar projects, or more, as an engineer during the last 5 years = 10 points
4- Experience of the refrigeration technician	Must have completed a minimum of 1 similar project as a technician during the last 5 years.	Has completed 1 similar project as a production supervisor during the last 5 years = 1 point Has completed 2 similar projects as a production supervisor during the last 5 years = 3 points Has completed 3 similar project, or more, as a production supervisor during the last 5 years = 5 points

4.2. Basis of Selection

1. To be declared responsive, a bid must:

- (a) comply with all the requirements of the bid solicitation;
- (b) meet all mandatory criteria;

2. Bids not meeting (a) and (b) will be declared non-responsive.

3. The evaluation will be based on the highest responsive combined rating of technical merit and price. The ratio will be 50% for the technical merit and 50% for the price.

4. To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained/maximum number of points available multiplied by the ratio of 50%.

5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 50%.

6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.

7. Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.

Example:

The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 50/50 ratio of technical merit and price, respectively. The total available points equals 35 and the lowest evaluated price is \$245,000.00.

Basis of Selection - Highest Combined Rating Technical Merit (50%) and Price (50%).

		Bidder 1	Bidder 2	Bidder 3
Overall Technical Score		35/35	30/35	24/35
Bid Evaluated Price		555,000	277,500	245,000
Calculations	Technical Merit Score	$35/35 \times 50 = 50$	$30/35 \times 50 = 42.86$	$24/35 \times 50 = 34.23$
	Pricing Score	$245/555 \times 50 = 22.07$	$245/277.5 \times 50 = 44.14$	$245/245 \times 50 = 50$
Combined Rating		72.07	87	84.23
Overall Rating		3rd	1st	2nd

PART 5 - CERTIFICATIONS

5.1 Generality

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

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default, if any certification made by the Bidder is found to be untrue whether 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 with this request will also render the bid non-responsive or will constitute a default under the Contract.

5.2. Mandatory Certifications Required Precedent to Contract Award

5.2.1 Code of Conduct and Certifications - Related documentation

By submitting a bid, the Bidder certifies that the Bidder and its affiliates are in compliance with the provisions as stated in Section 01 Code of Conduct and Certifications - Bid of Standard Instructions 2003. The related documentation therein required will assist Canada in confirming that the certifications are true.

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](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from [Human Resources and Skills Development Canada \(HRSDC\) - Labour's](#) website.

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

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

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

PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

6.1 Security Requirement (*Not used*)

6.2 Financial Requirements (*Not used*)

6.3 Accommodation (*Not used*)

6.4 Parking (*Not used*)

6.5 Material and Supply Support (*Not used*)

6.6 Workers' Compensation - Letter of Good Standing (*Not used*)

6.7 Welding Certification

At bids closing date the Bidder should submit evidence demonstrating its certification to the welding standards in accordance with the following:

Welding must be undertaken by a company Certified by the Canadian Welding Bureau (CWB) to the requirements of the following Canadian Standards Association (CSA) standards:

- (a) CSA W47.1, Certification of Companies for Fusion Welding of Steel, section 2; and
- (b) CSA W59, Welded steel construction (metal arc welding).

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

6.8 Valid Labour Agreement (*Not used*)

6.9 Work Schedule and Reports (*Not used*)

6.10 Fueling and De-fueling Crown Vessels (*Not used*)

6.11 ISO 9001:2000 - Quality Management Systems (*Not used*)

6.12 Environmental Protection (*Not used*)

6.13 Insurances Requirements

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

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PART 7 - RESULTING CONTRACT CLAUSES

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

1. Requirement

a) to carry out the alterations of the Canadian Coast Guard Ship (C.C.G.S.) Pierre Radisson in accordance with the associated Technical Specification attached as Annex A. The ship will be in the Port of Quebec for work to be carried out.

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

2. Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the *Standard Acquisition Clauses and Conditions* Manual issued by Public Works and Government Services Canada (PWGSC). The Manual is available on the PWGSC Website:
<http://sacc.pwgsc.gc.ca/sacc/index-e.jsp> .

2.1 General Conditions

2030,(2014-09-25), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract. (with the exception of Article 26 which is deleted in its entirety).

Section 22 of 2030 is amended in Annex E Warranty.

2.2 Supplemental General Conditions

1029 (2010-08-16) Ship Repairs, excluding section 09 apply to and form part of the Contract.

3. Security Requirement

There is no security requirement associated with this Statement of Work

4. Term of Contract

The period of the Contract is from date of Contract up to the end of the warranty period.

4.1 Work Period

Work is to commence and to be completed during the Work Period as follows:

Start of work: October 12th, 2015
End of work: December 24th, 2015

The Contractor agrees that the above time frame provides an adequate period to perform the subject work and absorb a reasonable amount of unscheduled work; and further, that it has sufficient material and human resources allocated or available to complete the subject work and a reasonable amount of unscheduled work within the Work Period.

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5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Michael Woods
Marine Supply Specialist
Public Works and Government Services Canada
Québec area
Marine division
1550, avenue D'Estimauville, Québec, (Québec) G1J 0C4,
Quebec, Canada
michael.woods@tpsgc-pwgsc.gc.ca
Phone: (418) 649-2715
Fax: (418) 648-2209

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.

5.2 Technical Authority

The Technical Authority for the Contract is:

Name will be determined at Contract award

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

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

5.3 Inspection Authority/Inspector

The Inspection Authority for the Contract is:

See section 5.2

The Inspection Authority is the Department of Public Works and Government Services Canada, who for the purposes of this requirement is the inspector responsible for inspection of the work and acceptance of the finished work under this requirement. The Inspection Authority will be represented on-site by a designated inspector and such other Government of Canada inspectors who will from time to time be assigned in support of the designated Inspector.

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6. Payment

6.1 Basis of Payment - Firm Price

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid the firm price indicated in Annex B. Goods and Services Tax or Harmonized Sales Tax is extra, if applicable. Payment for unscheduled work will be done in accordance with Basis of Payment outlined at Annex B.

6.2 Method of Payment

SACC Manual Clause H1000C (2008-05-12) Single Payment
SACC Manual Clause C6000C (2011-05-16) Limitation of Price

7. Invoicing Instructions

7.1 The Contractor must submit invoices in accordance with the information required in Section 13 of 2030, (2014-09-25), General Conditions - Higher Complexity - Goods

7.2 Invoice

Invoice to be made to the name of:

DFOinvoicing-MPOfacturation@dfo-mpo.gc.ca

Write the name of the contact person;

Michelle Turcotte – Tel. 418 648-5930

Mailing Address
Pêches et Océans Canada
PO Box 1901, STN A
Fredericton (Nouveau-Brunswick)
E3B 5G4

Electronic Copy to be sent for verification to:

michael.woods@tpsgc-pwgsc.gc.ca

Mailing Address

Public Works and Government Services Canada
Supply Directorate
1550, avenue D'Estimauville
Québec, (Québec)
G1J 0C4
Canada

Att.: Michael Woods

8. Certifications

8.1 Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the entire contract period. If the Contractor does

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not comply with any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

9. Applicable Laws

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

10. Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the Supplemental General Conditions 1029, (2010-08-16), Ship Repairs;
- (c) General Conditions 2030, (2014-09-25) - Higher Complexity - Goods;
- (d) Annex A, Requirement;
- (e) Annex B, Basis of Payment;
- (f) Annex C, Insurance Requirements;
- (g) Annex D, Inspection/Quality Assurance/Quality Control;
- (h) Annex E, Warranty;
- (i) Annex I, ; and
- (i) the Contractor's bid dated _____ .

11. Insurance Requirements

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

The Contractor is responsible to decide if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage will be at the Contractor's expense, and for its own benefit and protection.

The Contractor must forward to the Contracting Authority within three (3) calendar days after the date of award of the Contract a Certificate of Insurance including details of the insurance coverage, exclusions, deductibles and conditions and confirming that the insurance policy complying with the requirements is in force. The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

12. Financial Security (*Not used*)

13. Accommodation (*Not used*)

14. Parking (*Not used*)

15. Sub-contracts and Sub-contractor List (*Not used*)

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16. Work Schedule and Reports

No later than **five (5)** calendar days after contract award, the preliminary schedule must be revised and expanded as necessary and resubmitted before commencement of the Work.

The Contractor must provide a detailed work schedule showing the commencement and completion dates for the Work in the available work period, including realistic target dates for significant events. During the Work Period the schedule is to be reviewed on an ongoing basis by the Inspection Authority and the Contractor, updated when necessary, and available in the Contractor's office for review by Canada's authorities to determine the progress of the Work.

Production work schedules must be revised and resubmitted before each Progress Meeting. The revised schedules must show the effect of progressed work and approved work arisings. Changes in scheduled completion dates due to unscheduled work will not be accepted except as negotiated under Design Change or Additional Work, Article 26.

17. Insulation Materials - Asbestos Free

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

18. Loan of Equipment - Marine (Not used)

19. Trade Qualifications

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

20. Material and Supply Support (Not used)

21. ISO 9001:2000 - Quality Management Systems (Not used)

22. Quality Control Plan

The Contractor must implement and follow the Quality Control Plan (QCP) prepared according to the latest issue (at contract date) of ISO 10005 Quality management - Guidelines for quality plans, approved by the Inspection and Technical Authorities. The QCP shall describe how the Contractor will conform to the specified quality requirements of the Contract and specify how the required quality activities are to be carried out, including quality assurance of subcontractors. The Contractor must include a traceability matrix from the elements of the specified quality requirements to the corresponding paragraphs in the QCP.

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

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

Refer to Annex "D" for further details on the Quality Control Plan requirements.

23. Welding Certification

Welding must only be undertaken by a company Certified by the Canadian Welding Bureau (CWB) to the requirements of the following Canadian Standards Association (CSA) standards:

- (a) CSA W47.1, Certification of Companies for Fusion Welding of Steel, section 2; and
- (b) CSA W59, Welded steel construction (metal arc welding).

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

Before the commencement of any fabrication work, and upon request from the Inspection Authority, the Contractor must provide approved welding procedures and/or a list of welding personnel intended to be used in the completion of the work. The list must identify the CWB welding procedure qualifications attained by each of the personnel listed and must be accompanied by a copy of each person's current CWB welding certification.

24. Environmental Protection

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

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

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

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

25. Fueling and De-fueling a Crown Vessel (*Not used*)

26. Procedure for Design Change or Additional Work

SACC Manual Clause B5007C (2010-01-11) Design Change or Additional Work

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26.1 Price Breakdown:

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

26.2 Pro-rated Prices:

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

27. Equipment/Systems: Inspection/Test (*Not used*)

28. Inspection and Test Plan (*Not used*)

29. Vessel Custody (*Not used*)

30. Vessel manned Refits

SACC Manual Clause A0032C (2011-05-16) Vessel Manned Refits

31. Pre-Work Period Meeting

A Pre-Work Period meeting will be convened and chaired by the Contracting Authority at the Contractor's facility **two (2)** working days before the commencement of the work period.

32. Meetings

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

33. Outstanding Work and Acceptance

The Inspection Authority, in conjunction with the Contractor, will prepare a list of outstanding work items towards the end of the vessel Work Period. This list will form the annexes to the formal acceptance document for the vessel. A Contract Completion Meeting will be convened by the Inspector on the work completion date to review and sign off the Acceptance Document. In addition to any amount held under the Warranty Holdback Clause, a holdback of twice the estimated value of outstanding work will be held until completion of said work.

The PWGSC-TPSGC 1205 Acceptance Document is to be completed and distribution is to be made by the Public Works and Government Services Canada Inspection Authority as follows:

- (a) original to the PWGSC Contracting Authority
- (b) one copy to the Technical Authority
- (c) one copy to contractor
- (d) Contracting authority

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34. Licensing

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

35. Hazardous Waste - Vessels

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

36. Government Site Regulations

SACC Manual Clause A9068C (2010-01-11) Government Site Regulations

37. Scrap and Waste Material

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

38. Stability and Weight Management (*Not used*)

39. Vessel - Access by Canada (*Not used*)

40. Title to Property - Vessel (*Not used*)

41. Defence Contract

SACC Manual Clause A9006C (2012-07-16) Defence Contract

42. Limitation of Contractor's Liability for Damages to Canada

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

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

(a) Any infringement of intellectual property rights;

(b) Any breach of warranty obligations;

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

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

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

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

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

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

7. In the event of a termination under this Article, the Contract will automatically remain in force subject to all of the same terms and conditions until the date of termination and the Contractor agrees that it will be paid in accordance with the applicable provisions as set out in the Basis of Payment, Annex B and that the Contractor's liability remains as specified in subarticles (1) through (4), above.

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

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ANNEX A

Requirement

See electronic Annex.

ANNEX B

BASIS OF PAYMENT FIRM PRICE

Remark to Bidder: Annex B will form the Basis of Payment for the resulting contract and should not be filled in at the bid submission stage. Refer to annex ‘I’.

B1 Contract Firm Price

A)	Known Work For work as stated in Contract Clause 1a), Specified in Annex “A” for a FIRM PRICE of:	\$ _____
B)	Applicable taxes	\$ _____
C)	Total Firm Price	\$ _____

B2 Unscheduled Work

Payment for Unscheduled Work:

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

Number of hours (to be negotiated) X \$ _____, being the Contractor’s firm hourly charge-out labour rate which includes overhead and profit, plus net laid-down cost of materials to which will be added a mark-up of 10 percent, plus Goods and Services Tax or Harmonized Sales Tax, if applicable, calculated at 5 percent of the total cost of material and labour. The firm hourly charge-out labour rate and the material mark-up will remain firm for the term of the Contract and any subsequent amendments.

B2.1: Notwithstanding definitions or usage elsewhere in this document, or in the Bidder’s Cost Management System, when negotiating *Hours* for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package. Elements of *Related Labour Costs* identified in B2.2 below, will not be negotiated, but will be included in the firm hourly Charge-out Labour Rate in accordance with paragraph B2.2

B2.2: Allowance for *Related Labour Costs* such as: Management, Direct Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Inspecting and Reporting, and Estimating will be included as *Overhead* within the *firm hourly Charge-out Labour Rate* entered in line B2 above.

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

ANNEX C

INSURANCE REQUIREMENTS

C.1 Ship Repairers' Liability Insurance

1. The Contractor must obtain Ship Repairer's Liability Insurance and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$10,000,000 per accident or occurrence and in the annual aggregate

2. The Ship Repairer's Liability insurance must include the following:

- (a) Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.
- (b) waiver of subrogation rights: Contractor's insurer to waive all rights of subrogation against Canada as represented by the Department of Public Works and Government Services Canada and the Canadian Coast Guard for any and all loss of or damage to the vessel, however caused.
- (c) Notice of Cancellation: The Insurer will endeavor to provide the Contracting Authority thirty (30) days written notice of cancellation.
- (d) Contractual Liability: The policy must, on a blanket basis or by specific reference to the contract, extend to assumed liabilities with respect to contractual provisions.
- (e) Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

C.2 Commercial General Liability Insurance

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$10,000,000 per accident or occurrence and in the annual aggregate

2. The Commercial General Liability Insurance policy must include the following:

- (a) Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.
- (b) Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.
- (c) Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.

- (d) Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
- (e) Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
- (f) Employees and, if applicable, Volunteers must be included as Additional Insured.
- (g) Employers' Liability : to protect the Contractor for liabilities arising in the management and administration of statutory and contractual entitlements of its employees.
- (h) Notice of Cancellation: The Insurer agrees to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
- (i) If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
- (j) Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.
- (k) Sudden and accidental Pollution Liability (minimum 72 hours): To protect the Contractor for liabilities arising from damages caused by accidental pollution incidents.

In addition, if the Contractor decides NOT to obtain Ship Repairers' Liability Insurance. (See Article C1) then the Commercial General Liability Insurance Policy must also include the following:

- a) Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.
- b) Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.
- c) Amendment to the Watercraft Exclusion to extend to incidental repair operations on board watercraft.

ANNEX D

INSPECTION/QUALITY ASSURANCE/QUALITY CONTROL

D.1 Inspection and Test Plan (ITP):

1. The Contractor must prepare an Inspection and Test Plan (ITP) comprising individual inspection and test plans for each specification item of this project, in accordance with the Quality Standard and its Quality Control Plan. The ITP must be submitted to the Inspection Authority for review and amended by the Contractor to the satisfaction of the Inspection Authority.

- (a) Each ITP must contain all inspection points identified in the Technical Specification highlighting any mandatory points that must be witnessed by the Inspection Authority and other "hold" points imposed by the Contractor to ensure the quality of the work.
- (b) Milestone delivery date for the ITP is given in the Contract, however individual ITPs should be forwarded for review as developed.

2. Coding:

(a) Each Inspection and Test Plan (ITP) is to be coded for identification clearly demonstrating a systematic approach similar to the following (Contractor's system should be defined in its Quality Control Plan):

(i) Prefixes for Inspections, Test and Trials:

Prefix "1" is a Contractor inspection, i.e. 1H-10-01, 1H-10-02;

prefix "2" is a Contractor post repair test, i.e. 2H-10-01; and

prefix "3" is a Contractor post repair trial, i.e. 3H-10-01.

(b) Specification items followed by assigned sequence numbers for inspection processes within each Specification Item; and

(c) Cross reference to a verification document number

3. Inspection and Test Plan Criteria:

Inspection criteria, procedures and requirements are stated in the specifications, drawings, technical orders and reference standards invoked by the Specifications. Test and trial documentation may also be included or referenced in the Specifications. An individual Inspection and Test Plan (ITP) is required for each Specification item.

(a) All ITPs must be prepared by the Contractor in accordance with the above criteria, its Quality Plan, and must provide the following reference information:

(i) the ship's name;

(ii) the Specification item number;

(iii) equipment/system description and a statement defining the parameter which is being inspected;

(iv) a list of applicable documents referenced or specified in the inspection procedure;

(v) the inspection, test or trial requirements specified in the Technical Specification;

-
- (vi) the tools and equipment required to accomplish the inspection;
 - (vii) the environmental conditions under which the inspections are to be conducted and the tolerances on the inspection conditions;
 - (viii) a detailed step-by step procedure of how each inspection is to be performed, conformance parameters, accept/reject criteria and recording of results, deficiencies found and description of corrective action(s) required;
 - (ix) name and signature of the person who prepared the plan, date prepared and amendment level; and,
 - (x) names and signatures of the persons conducting and witnessing the inspection, test or trial.

4. Contractor Imposed Testing:

Tests and trials in addition to those given in the Technical Specification must be approved by the Inspection Authority.

- (a) Amendments: Amendment action for the Inspection and Test Plans must be ongoing throughout the refit and reflect the inspection requirements for unscheduled work. Amendments must be submitted as developed, but not less frequently than once every second week.

D.2 Conduct of Inspection

1. Inspections must be conducted in accordance with the ITP.
2. The Contractor must provide its own staff or subcontracted staff to conduct inspections, tests and trials; excepting that Technical Authority or Inspection Authority personnel may be designated in the specifications, in which case the Contractor must ensure that its own staff are provided in support of such inspection/test/trial.
3. The Contractor must ensure that the required conditions stated in the ITP prevail at the commencement of, and for the duration of, each inspection/test/trial.
4. The Contractor must ensure that personnel required for equipment operation and records taking during the inspection/test/trial are briefed and available at the start and throughout the duration of the inspection/test/trial. Tradesmen or FSRs who may be required to effect minor changes or adjustments in the installation must be available at short notice.
5. The Contractor is to coordinate the activities of all personnel taking part in each inspection/test/trial and ensure that safe conditions prevail throughout the inspection/test/trial.

D.3 Inspection Records and Reports

1. The Contractor on the inspection record, test or trials sheets as applicable must record the results of each inspection. The Contractor must maintain files of completed inspection records consistent with the Quality Standard and its Quality Plan for this project.
2. The Contractor's QC representative (and the FSR when required) must sign as having witnessed the inspection, test or trial on the inspection record. The Contractor must forward originals of completed inspection records, together with completed test(s) and/or trials sheets to the Inspection Authority as they are completed.
3. Unsatisfactory inspection/test/trial results, for which corrective action cannot be completed during the normal course of the inspection/test/trial, will require the Contractor to establish and record the cause of the unsatisfactory condition to the satisfaction of the Inspection Authority. Canada representatives may assist in identification where appropriate.

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

D.4 Inspection and Trials Process

1. Drawings and Purchase Orders

- (a) Upon receipt of two (2) copies of each drawing or purchase order, the designated Inspection Authority will review its content against the provisions of the Specifications. Where discrepancies are noted, the Inspection Authority will formally advise all concerned, in writing using a Discrepancy Notice. The resolution of any such discrepancy is a matter for consultation between the Contractor and other Crown Authorities.

The Inspection Authority is NOT responsible for the resolution of discrepancies.

2. Inspection

- (a) Upon receipt and acceptance of the Contractor's ITP, inspection will consist of a number of Inspection Points supplemented by such other inspections, tests, demonstrations and trials as may be deemed necessary by the Inspection Authority to permit him to certify that the work has been performed in compliance with the provisions of the Specifications. The Contractor must be responsible for notifying the designated Inspection Authority of when the work will be available for inspection, sufficiently in advance to permit the designated Inspection Authority to arrange for the appropriate inspection.
- (b) The Inspection Authority will inspect the materials, equipment and work throughout the project against the provisions of the Technical Specification and, where non-conformances are noted, will issue appropriate **INSPECTION NON-CONFORMANCE REPORTS**.
- (c) The Contract requires the implementation of a Quality Assurance/Quality Control system, so the Inspection authority must require that the Contractor provide a copy of its internal inspection report pertaining to a work item before conducting the requested inspection. If third party inspections are required by the Contract (e.g. inspections by a certified CWB 178.2 welding inspector), the reports of these inspections must be required before the Work is inspected by the Inspection Authority.
- (d) The QA/QC system is a requirement, so if the documentation is presented to the Inspection Authority before an inspection stating that the Work is satisfactory but the Inspection Authority finds that the Work has not been satisfactorily inspected, the Inspection Authority must issue an Inspection Non-conformance Report against the Work and another against the failure of the Contractor's QA/QC system.

- (e) Before carrying out any inspection, the Inspection Authority must review the requirements for the Work and the acceptance and/or rejection standards to be applied. Where more than one standard or requirement is called up and they are potentially conflicting, the Inspection Authority must refer to the order of precedence in the Contract to determine the standard or requirement to be applied.
3. Inspection Non-conformance report
- (a) An Inspection Non-conformance report will be issued for each non-conformance noted by the Inspection Authority. Each report will be uniquely numbered for reference purposes, will be signed and dated by the Inspection Authority, and will describe the non-conformance.
- (b) When the non-conformance has been corrected by the Contractor and has been re-inspected and accepted by the Inspection Authority, the Inspection Authority will complete the Report by adding an applicable signed and dated notation.
- (c) At the end of the project, the content of all Inspection Non-conformance Reports which have not been signed-off by the Inspection Authority will be transferred to the Acceptance Documents before the Inspection Authority's certification of such documents.
4. Tests, Trials, and Demonstrations
- (a) To enable the Inspection Authority to certify that the Work has been performed satisfactorily, in accordance with the Contract and Specifications, the Contractor must schedule, co-ordinate, perform, and record all specified Tests, Trials and Demonstrations required by the Inspection Authority.
- (b) Where the Specifications contain a specific performance requirement for any component, equipment, sub-system or system, the Contractor must test such component, equipment, sub-system or system to the satisfaction of the Inspection Authority, to prove that the specified performance has been achieved and that the component, equipment, sub-system or system performs as required by the specifications.
- (c) Tests, trials and demonstrations must be conducted in accordance with a logical, systematic schedule which must ensure that all associated components and equipment are proven before sub-systems demonstration or testing, and that sub-systems are proven before system demonstration or testing.
- (d) Where the Specifications do not contain specific performance requirements for any component, equipment, sub-system or system, the Contractor must demonstrate such component, equipment, sub-system or system to the satisfaction of the Inspection Authority.
- (e) The contractor must submit its Test and Inspection Plan as indicated in section D.1 above.
- (f) The Contractor must co-ordinate each test, trial and demonstration with all interested parties, including the Inspection Authority; Contracting and Technical Authorities; regulatory authorities; Classification Society; Sub-contractors; etc. The Contractor must provide the Inspection Authority and other Crown Authorities with a minimum of five working days notice of each scheduled test, trial, or demonstration.
- (g) The Contractor must keep written records of all tests, trials, and demonstrations conducted.
- (h) The Contractor must in all respects be responsible for the conduct of all tests and trials in accordance with the requirements of the Contract.

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- (i) The Inspection Authority and the Technical Authority reserve the right to defer starting or continuing with any sea trials for any reasonable cause including but not limited to adverse weather, visibility, equipment failure or degradation, lack of qualified personnel and inadequate compliance with safety standards.

ANNEX E

WARRANTY

2030 (2014-09-25) General Conditions Higher Complexity Goods are hereby amended, by deleting section 2030 22(2014-09-25), Warranty and replacing it as follows:

E.1 Section 22 Warranty

1. At the discretion of the Minister, the Contractor will replace or make good at its own expense any finished work, excluding Government Issue incorporated therein, which becomes defective or which fails to conform to contract requirements as a result of faulty or inefficient manufacture, material or workmanship.

2. Notwithstanding prior acceptance of the finished work, and without restricting any other term of the Contract or any condition, warranty or provision implied or imposed by law, the Contractor hereby warrants that the following shall be free from all defects and shall conform with the requirements of the contract:

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

Original cost to Canada of the underwater painting Work, divided by three hundred and sixty-five (365) days and multiplied by the number of days remaining in the warranty period. The resultant would represent the "Dollar Credit" due to Canada from the Contractor.

- (b) All other painting Work for a period of three hundred and sixty-five (365) days commencing from the date of acceptance of the Work;

- (c) all parts and material provided by the Contractor for a period of three hundred and sixty-five (365) days commencing from the date of acceptance of such parts or material;

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

- (i) the warranty on the Work related to any system or equipment not immediately placed in continuous use or service shall extend for a period of ninety (90) days from the date of acceptance of the vessel;

- ii) for all outstanding defects, deviations, and Work items listed on the Acceptance Document at Delivery, the Warranty will be ninety (90) days from the subsequent date of acceptance for each item.

3. If more than one warranty period applies, in accordance with the above, to any Work, then the warranty shall be for the longest period.

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

E.2 Warranty Procedures

E2.1 Scope

- (a) The following are the procedures which suit the particular requirements for warranty considerations for a vessel on completion of a refit.

E2.2 Definition

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

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

E2.3 Warranty Conditions

- (a) General Conditions 2030, Higher Complexity - Goods are augmented by clauses incorporated into the subject Contract.
- (b) The warranty periods may be stated in more than one part.
 - (i) 90 days commencing from the day the PWGSC 1205 Acceptance Document is signed for workmanship provided by the contractor for the refit work specified;
 - (ii) 365 days from the date of undocking the vessel for the specified areas of underwater paint and topside painting;
 - (iii) 365 days commencing from the day the PWGSC 1205 Acceptance Document is signed for parts and material provided by the contractor for the refit work specified;
 - (iv) Any other specific warranty periods that may be required in the contract or offered by the Contractor.
- (c) The foregoing does not cover the disposition of other deficiencies that will be directly related to Technical Authority problem areas of the following nature:
 - (i) items becoming unserviceable that were not included in the refit specification;
 - (ii) refit specifications or other related documentation requiring amendments or corrections to increase viability; and
 - (iii) work performed that is directly related to the Technical Authority.

E2.4 Reporting Failures With Warranty Potential

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

-
- (b) These procedures are necessary as invoking a warranty does not simply mean that the warrantor will automatically proceed with repairs at his expense. A review of the defect may well result in a disclaimer of responsibility, therefore, it is imperative that during such a review the Department is directly represented by competent technical authority qualified to agree or disagree with the warrantor's assertions.

E2.5 Procedures

- (a) Immediately it becomes known to the Ship's Staff that an equipment/system is performing below accepted standards or has become defective, the procedures for the investigation and reporting are as follows:
- (i) The vessel advises the Technical Authority when a defect, which is considered to be directly associated the refit work, has occurred.
- (ii) On review of the Specification and the Acceptance Document, the Technical Authority in consort with Ship's Staff is to complete the Tombstone Data and section 1 of the Warranty Claim Form and forward the original to the Contractor for review with a copy to the PWGSC Contracting Authority. If the PWGSC Contracting or Inspection Authority is unable to support warranty action, the Defect Claim Form will be returned to the originator with a brief justification. (It is to be noted that in the latter instance PWGSC will inform the Contractor of its decision and no further action will be required of the Contractor.

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

- (iii) Assuming the Contractor accepts full responsibility for repair, the Contractor completes Section 2 and 3 of the Warranty Claim Form, returns it to the Inspection Authority who confirms corrective action has been completed, and who then distributes the form to the Technical Authority and the PWGSC Contracting Authority.
- (b) In the event that the Contractor disputes the claim as a warranty defect, or agrees to share, the contractor is to complete Part 2 of the Warranty Claim Form with the appropriate information and forward it to the Contracting Authority who will distribute copies as necessary.
- (c) When a warranty defect claim is disputed by the Contractor, the Technical Authority may arrange to correct the defect by in-house resources or by contracting the work out. All associated costs must be tracked and recorded as a possible charge against the contractor by PWGSC action. Material costs and manhours expended in correcting the defect are to be recorded and entered in Section 5 of the warranty defect claim by the Technical Authority who will forward the warranty defect claim to the PWGSC Contracting Authority for action. Defective parts of equipment are to be retained pending settlement of claim.
- (d) Defective equipment associated with potential warranty should not normally be dismantled until the contractor's representative has had the opportunity to observe the defect. The necessary work is to be undertaken through normal repair methods and costs must be segregated as a possible charge against a contractor by PWGSC action.

E2.6 Liability

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

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

E2.7 Alongside Period For Warranty Repairs and Checks

- (a) If at all possible, an alongside period for the vessel is to be arranged just before the expiration of the 90 day warranty period. This alongside period is to provide time for warranty repair and check by the contractor.
- (b) In respect to the underwater paint, should it become defective during the associated warranty period the contractor is only liable to repair to a value determined as follows:

"Original cost to Canada for painting and preservation of the underwater section of the hull, divided by three hundred and sixty-five (365) days and multiplied by the number of days remaining in the three hundred and sixty-five (365) days warranty period. The resultant would represent the 'Dollar Credit' due to Canada from the Contractor."

- (c) The Underwater paint system, before expiration of the warranty, should be checked by divers. The Technical Authority, is to arrange the inspection and inform the Contracting Authority of any adverse results.

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

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

Date of Corrective Action - Date de modalité de reprise

Client Name and Signature - Nom et signature de client

Date

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

Signature – Signature

Date

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ANNEX F

VESSEL CUSTODY

(NOT USED)

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Annex G

Security Requirements Check List

(NOT USED)

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ANNEX H

(NOT USED)

ANNEX I

Financial Bid Presentation Sheet

I1 Price for Evaluation

A)	Known Work For work as stated in Part 1 Clause 2a, Specified in Annex “A” and detailed in the attached Pricing Data Sheets Appendix 1 of Annex “I”, for a FIRM PRICE of:	_____ \$
B)	Unscheduled Work Contractor <i>Labour Cost</i> : Estimated labour hours at a firm <i>hourly Charge-out Labour Rate</i> , including overhead and profit for evaluation purpose only: 100 person hours X \$ _____ per hour for a PRICE of: See Note I2.1 and I2.2 below.	_____ \$
C)	EVALUATION PRICE GST Excluded, [(A) + B]): For an EVALUATION PRICE of :	_____ \$

I2 Unscheduled Work

The Contractor will be paid for unscheduled work arising, as authorized by the Minister, calculated in the following manner:

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

I2.1: Notwithstanding definitions or usage elsewhere in this document, or in the Bidder’s Cost Management System, when negotiating *Hours* for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package.

Elements of Related Labour Costs identified in I2.2 below, will not be negotiated, but will be compensated for in accordance with paragraph I2.2. It is therefore incumbent upon the Bidder to enter values in the above table which will result in fair compensation, regardless of the structure of their Cost Management System.

I2.2: Allowance for *Related Labour Costs* such as: Management, Direct Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Inspecting and Reporting, and Estimating will be included as *Overhead* for the purposes of determining the *Charge-out Labour Rate* entered in line I2 above.

I2.3: The 10% mark-up rate for materials will also apply to subcontracted costs. The mark-up rate includes any allowance for material and subcontract management not allowed for in the *Chargeout Labour Rate*. The Contractor will not be entitled to a separate labour component for the purchase and handling of materials or subcontract administration.

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Appendix 1 of Annex I

PRICING DATA SHEET		
Item	Description	Fixed Price
1	Modernization of Domestic Refrigeration system.	_____ \$
2	Modernization of Cargo Refrigeration system.	_____ \$
3	Hourly rate list: Refrigeration technician: _____\$/hour; Marine electrician: _____\$/hour; and Welder/Fitter: _____\$/hour.	
4	Spare Parts as indicated at para 5.4 of Annex A.	
	4.1 Two complete sealant kits	_____ \$
	4.2 Two complete flexible pipe and hose kits for one unit	_____ \$
	4.3 A spare compressor for each unit (domestic and cargo) with isolation valves	_____ \$
	4.4 A complete kit consisting of thermometers, manometers, probes and sensors for one unit	_____ \$
	4.5 A kit consisting of valves, solenoid valves, a temperature control valve and expansion valves	_____ \$
	4.6 Two filter kits and a spare dryer	_____ \$
	4.7 Five LED lights of every kind	_____ \$
	4.8 A complete kit consisting of the elements in the units' control panels. This includes the automatic control system and its programming software, if any.	_____ \$
	4.9 Six 30-kg R507 refrigerant gas bottles	_____ \$
	4.10 Lubricating oils for making two oil changes on each unit	_____ \$
		_____ \$
A) SCHEDULED WORK - TOTAL FIRM PRICE		_____ \$

CCGS Pierre Radisson **Refrigeration Systems Modernization**

Prepared by: Marine Engineering
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Québec, QC
G1K 7Y7

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1.0 SCOPE

- The Contractor shall provide the required labour, material and equipment to modernize the Cargo and Domestic refrigeration systems on the *Pierre Radisson*.
- Modernization includes design, engineering, installation and commissioning of the new refrigeration systems.
- Modernization includes replacing the compressors, electric motors, condensers, instruments and controls, coolers, piping and connections, valves, bypasses, interconnections, etc.
- The system must be of marine construction with marine components and approved by Transport Canada or an accredited classification society.

2.0 REFERENCES

2.1. Reference drawings/data plate information

- CCGS *Pierre Radisson* general arrangement
- Propulsion room
- Design condition (Cargo-Domestic)
- Wiring diagram (Cargo-Domestic)
- Flow diagram (Cargo-Domestic)
- Photos:
 - Watertight door – Porte étanche
 - Access alleyways – corridors d'accès
 - Domestic
 - Cargo

2.2. Regulations/standards

- TP 127 – Ships Electrical Standards (2008), Transport Canada
- *Canada Shipping Act, 2001* and its regulations
- *Marine Machinery Regulations* (SOR/90-264)
- *Federal Halocarbon Regulations, 2003*
- *Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems* (Environment Canada)

3.0 TECHNICAL DESCRIPTION

3.1. General

- The new refrigeration systems shall be designed, to the extent possible, with identical units in order to reduce the number of spare parts to be kept.

- The new systems shall have a 100% redundancy with a unit that acts as a standby for the other unit. There shall be a complete redundancy with power and controls. There must be a minimum of two chiller units per cold room.
- The domestic refrigeration system consists of five cold rooms.
 1. Cold-cool room: 67.14 m³; temperature: –15 to –20°C
 2. Cool-cool room: 22.54 m³; temperature: 1 to 3°C
 3. Fruit-vegetables room: 47.43 m³; temperature: 1 to 2°C
 4. Dairy room: 16.31 m³; temperature: 3 to 4°C
 5. Potato room: 5.6 m³; temperature: 5 to 8°C
- The Cargo refrigeration system has one (1) cold room: 56.63 m³; temperature: –15 to –18°C.
- The systems must be of modern, robust and proven construction. They must be resistant to the vibrations on an icebreaker that navigates the waters of the St. Lawrence Seaway (from the Great Lakes to the Gulf) and the Atlantic, Arctic and Pacific oceans year-round.
- The systems must work in all environmental and vessel operating conditions:
 1. Vessel outside air temperature: –30 to 35°C
 2. Sea water temperature: –2 to 31°C
 3. Machine room temperature: 10 to 50°C
 4. Vessel movement 45° side to side; cycle frequency 10 seconds.
 5. A permanent list of 15° to the port or starboard side.
 6. Vessel pitch ± 12°; cycle frequency 6 seconds.
 7. A permanent trim of 5° by the bow or the stern.
 8. For ice, the vessel is classified by Lloyd's. Its classification is 100-A and its certificate of seaworthiness issued by Transport Canada is for trips near coastline C1.
- The metric system is used on the vessel. All measurements must be in this system.
- The language of work used on the vessel is French. All information, plates, and stickers on engines must be in both official languages (French followed by English).
- The units shall be mounted on resilient supports adapted to vessel vibrations in ice. Devices shall be considered for limiting movement of these units in ice. Provide any flexible components required for the piping.
- The systems shall be constructed to allow for maintenance of all parts. To facilitate maintenance, they shall be designed to facilitate removal of any major components. The system must be provided with isolation valves and measurement points to allow the vessel crew and the outside Contractor to perform repairs.

- During replacement of the domestic system, the Contractor shall provide two refrigerated 20 ft containers so that the crew can empty the ship's refrigeration rooms. The Contractor shall be responsible for the proper operation of these containers. The vessel crew shall empty them upon completion of the work.
- The cranes and the vessel crew will be available to load and unload equipment through the stern storeroom. The Contractor shall bring material to be unloaded in the stern storeroom to the location indicated by the vessel crew. The Contractor shall be responsible for moving the equipment and material.
- All welding, cutting and grinding activities are the Contractor's responsibility. A hot-work permit shall be requested from the Chief Engineer for each day on which hot work will be necessary.

3.2. Removal

- Oils and R134 gases shall be emptied from the units. They shall be recovered and disposed of in accordance with the environmental regulations in force.
- Remove all components, piping and accessories in the old systems and dispose of them. The Contractor is responsible for offloading and disposing of scrap.
- When piping is removed and reinstalled, the Contractor shall take all the necessary precautions to prevent damage to ceiling tiles. The Contractor shall also protect the floor tiles and the walls in the alleyway of the main deck where the work is being performed. This protection must be removed and disposed of upon completion of the work. Any damage shall be repaired at the Contractor's expense.
- Upon removing anything, the Contractor shall check the condition of the vessel structures to ensure that they are suitable for installing new equipment.

3.3. Features of new Cargo and Domestic refrigeration systems

- Refrigerant
 - The system's refrigerant must be R507.
 - The systems shall operate with positive pressure of the refrigerant in all sections. Positive pressure is to prevent air from filtering into the system in the event of leaks or breakage.
 - The new refrigerant used shall reduce the heat exchange surface on the heat exchangers.
- Control
 - The controls shall be touch-sensitive Programmable Logic Controller (PLC) with HDMI colour and user-friendly software.
 - The new controls shall provide the temperature of the cold rooms locally and on the condensing unit panel.
 - The software shall record storage temperature history to enable assessment of the quality of the food stored.

- The software shall be used to assess the operation parameters (temperature and pressure) and to set guidelines for assessing system performance. The software shall graphically represent the parameters recorded.
 - The parameters shall be adjusted directly on the PLC and the adjustments will have to be password-protected.
 - The control shall control the cooling unit's defrost cycles, identify alerts and keep a record of alerts and defects.
 - The contractor shall supply the necessary equipment and authorizations to use the software and make modifications. A copy of the software and the software access program must be returned to the vessel.
 - Luminous indications on the tables shall be by LED lighting.
 - All alarms and sensors shall be connectable to the vessel alarm system (GE Fanuc CIMPLICITY). They shall be identified on solidly attached plates.
 - The control shall feature an option that stop the fan of the chillers with a timer. The purpose of this option is to stop the fan while loading the storage room in order to minimize the ice built-up on the chiller unit.
- Condensing units
 - The work includes one condensing unit per system. This unit is made up of two compressors and two sea water condensers.
 - Each compressor shall have the ability to maintain a refrigeration demand for the cold rooms where they are used while operating for a maximum of 18 out of 24 hours, with the exception of pull-down periods when both compressors can be used.
 - The tube-type marine condenser shall consist of 90/10 CuNi tubes with bronze head, corrosion-resistant bolts, zinc sacrificial anodes and two double liquid drains.
 - The condenser shall have enough pumping capacity to accommodate the entire refrigeration system in order to eliminate the need for a receiver like the one in the old system.
 - The Contractor shall prepare the bases for the new units by modifying or replacing the old ones.
 - The Contractor shall give the vessel crew two days to prepare and paint the bases before installing the new equipment.
 - The new units shall be installed in the same place as the old ones without going outside the perimeter occupied by the old units.
 - Compressors :
 - The compressors shall be hermetic scrolls compressors.
 - They shall be light, silent and compact.
 - They shall be resistant to damage caused by the aspiration of liquid refrigerants.
- Cooling units
 - The cooling units shall be equipped with PLC-controlled electric defrost, a thermal expansion valve and solenoid valves installed in the cooling unit's jacket.

- The cooling units shall be equipped with a recovery tray with heated drains that must discharge condensate by way of the shortest route to the bulkhead in the cold room. Discharging the condensate through the bulkhead must eliminate ice accretion in the floor drain.
- Condenser seawater circuit
 - The system must allow the seawater pump to start and to operate at a constant flow rate. The vessel has two seawater pumps per system. The control panel must allow transfer between pumps by way of a two-position selector: Pump A or Pump B.
 - The temperature control valve must be three-way to allow supply or rerouting of seawater to the condenser based on the temperature parameters.
 - Consider a valve for allowing air drainage. During ice operations, we have to be able to regularly purge air from the condensers.
 - The seawater pumps will not be replaced.
- Piping
 - The copper piping must be replaced. The copper piping must be silver plated and insulated with closed-cell non-halogen ½-inch Armaflex insulation and a vapour barrier.
 - Nitrogen hydrostatic testing must be done after assembly.
 - The leak detection test on the piping must be done before the insulation is installed.
 - Consider the watertight bulkhead penetration in sufficient quantities and manufactured in accordance with good naval construction practice.
 - All piping and electrical wiring in the units shall be well attached and supported.
- Power supply
 1. Power: 440 volts, 3 phases, 60 cycles (one circuit breaker for domestic and one for cargo).
 - Domestic: Domestic refrigeration panel P435-1, 30 A, Two 10-HP engines
 - Cargo: Cargo refrigeration panel P435-5, 30 A, Two 7.5-HP engines
 2. Control: 110 volts, 1 phase, 60 cycles (one circuit breaker per room)
 - Rooms:
 - Cargo (refrigeration cargo room) 40 A, P204-1
 - Fruit and vegetables 15 A, P204-4
 - Cool-cool room 15 A, P204-6
 - Dairy room 20 A, P204-2
 - Cold-cool room (small cargo) 40 A, P204-3
 - Potato room 15 A, P204-5
 3. Other circuit breakers (defrost, drain heater cable, etc.)

- Door de-icing 260 W each, (2) cargo and (1) small cargo: 20 A, P105-8 (dedicated circuit)
 - Drain heaters (4) cargo freezer ± 80 W (heater cable): 15 A, L9-7 (on lighting circuit and outlets)
 - Small cargo drain heater: ? W: 15 A, P204-5 (on the lighting circuit in the hall and small cargo)
4. All electrical wiring and terminal boards shall be well identified in accordance with the references in the plans provided by the manufacturer. Cable identifications shall be made of non-ferrous metal or heat-resistant plastic. All electrical wiring in the units shall be well attached and supported.
5. All control cables must be replaced. Power cables may be reused if they pass the following tests performed by the contractor:
- Insulation test between each conductor and the mass
 - Conductor insulation test

3.4. Locations

- The condensing unit is in the propulsion machine room. The new condensing units will be in the same location as the old ones.
- The cold rooms are on the main deck.

3.5. Obstructions

The system will be installed along the dock but it will not be possible to make a hole in the hull to bring equipment inside. The system must therefore be available as a module to be assembled once inside the vessel. The module shall therefore be of appropriate dimensions to get through the watertight bulkhead doors and the access alleyways.

- Door dimensions: 28 in. x 72 in.
- Minimum access alleyway dimensions: 36 in. x 66 in.

4.0 PROOF OF PERFORMANCE

4.1. Inspection and certification

- All work shall be completed to the satisfaction of the Chief Engineer and the Vessel Maintenance Manager.
- The Contractor shall provide a certificate of system compliance with halocarbon standards, regulations and legislation in force.

4.2. Tests

- Schedule two days for testing the systems and placing them in service.
- A leak detection test shall be performed on the entire system.

- If during testing maximum temperatures prevail, the system does not meet expectations. The Contractor shall be held responsible for any additional expenses involving system modifications to meet a need defined in these specifications.

5.0 DELIVERABLES

5.1. Plans/drawings/reports

- The Contractor shall provide the engineer-approved heat load calculations prior to the installation.
- The Contractor shall provide detailed electric circuit plans, refrigerant circuit plans (flow diagram), a parts list and component erection drawing in DMG (AutoCAD) and PDF prior to the beginning of the installation.
- The Contractor shall provide a report containing the data recorded during placing in service.

5.2. Maintenance manual

- Provide a complete operations and maintenance manual for each system. Provide four hard copies and one PDF file in both official languages.
- The maintenance manual shall contain the following:
 - A detailed description of the system and equipment
 - Installation instructions
 - Detailed maintenance program
 - Detailed system maintenance and system parts description
 - Detailed list of spare parts
 - The plans associated with the system and its parts
 - Repair guide

5.3. Training

- Schedule two non-consecutive two-day periods for training crews onboard the vessel on the operation and maintenance of each system. Include labour expenditures and travel time and costs (hotel, meals, vehicle and miscellaneous).
- Training shall, as a minimum, cover the following:
 - Systems operation
 - Systems maintenance and repair
 - Use of PLC in a repair process

5.4. Spare parts

- Two complete sealant kits
- Two complete flexible pipe and hose kits for one unit
- A spare compressor for each unit (domestic and cargo) with isolation valves
- A complete kit consisting of thermometers, manometers, probes and sensors for one unit
- A kit consisting of valves, solenoid valves, a temperature control valve and expansion valves
- Two filter kits and a spare dryer

- Five LED lights of every kind
- A complete kit consisting of the elements in the units' control panels. This includes the automatic control system and its programming software, if any.
- Six 30-kg R507 refrigerant gas bottles
- Lubricating oils for making two oil changes on each unit
- The spare parts shall be delivered to the vessel during the commissioning.