



RETURN BIDS TO:

RETOURNER LES SOUMISSIONS À:

Bid Receiving - PWGSC / Réception des
soumissions - TPSGC

11 Laurier St. / 11, rue Laurier

Place du Portage, Phase III

Core 0B2 / Noyau 0B2

Gatineau, Québec K1A 0S5

Bid Fax: (819) 997-9776

INVITATION TO TENDER

APPEL D'OFFRES

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

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

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

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

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

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

11 Laurier St. / 11, rue Laurier

6C2, Place du Portage

Gatineau, Québec K1A 0S5

Title - Sujet Mangystau 2 Dockside refit 2022 Mangystau 2 Radoub à quai 2022	
Solicitation No. - N° de l'invitation F7044-220251/A	Date 2022-07-25
Client Reference No. - N° de référence du client F7044-220251	GETS Ref. No. - N° de réf. de SEAG PW-\$MD-040-28753
File No. - N° de dossier 040md.F7044-220251	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM Eastern Daylight Saving Time EDT on - le 2022-08-24 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: Abbas, Haitham	Buyer Id - Id de l'acheteur 040md
Telephone No. - N° de téléphone (819) 955-1436 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Specified Herein Précisé dans les présentes	

Instructions: See Herein

Instructions: Voir aux présentes

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

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PART 1 - GENERAL INFORMATION

1.1 Introduction

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

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

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

1.2 Summary

1. The Requirement is:
 - a) To carry out the docking, inspection, repair, and maintenance and alterations of the Canadian Coast Guard Vessel **CCGS Mangystau-2** in accordance with Annex A – Statement of Work, and any associated technical information.
 - b) To carry out unscheduled work authorized by the Contracting Authority.
2. As per the Integrity Provisions under section 01 of Standard Instructions [2003](#) (2022-03-29) bidders must provide a list of all owners and/or Directors and other associated information as required. Refer to section 4.21 of the Supply Manual for additional information on the Integrity Provisions..
3. The requirement is exempt from the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), Annex 4 and the North American Free Trade Agreement (NAFTA), Chapter Ten Annex 1001.2b Paragraph 1(a). However, it is subject to the Canada Free Trade Agreement (CFTA). The sourcing strategy relating to this procurement will be limited to suppliers in Eastern Canada, in accordance with Shipbuilding, Refit, Repair and Modernization Policy (2010-08-16).
4. There is a Federal Contractors Program (FCP) for employment equity requirement associated with this procurement; see Part 5 - Certifications, Part 7 - Resulting Contract Clauses and the annex named Federal Contractors Program for Employment Equity - Certification.
5. This bid solicitation allows bidders to use the epost Connect service provided by Canada Post Corporation to transmit their bid electronically. Bidders must refer to Part 2 entitled Bidder Instructions, and Part 3 entitled Bid Preparation Instructions, of the bid solicitation, for further information

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Amd. No. - N° de la modif.
File No. - N° du dossier
040md F7044-220251

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

1.3 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 5 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

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

2.2 Submission of Bids

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

PWGSC Bid Receiving Unit

Only bids submitted using epost Connect service will be accepted. The Bidder must send an email requesting to open an epost Connect conversation to the following address:

tpsgc.dgareceptiondessomissions-abbidreceiving.pwgsc@tpsgc-pwgsc.gc.ca

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

It is the Bidder's responsibility to ensure the request for opening an epost Connect conversation is sent to the email address above at least ten days before the solicitation closing date.

Due to the ongoing and evolving COVID-19 outbreak, suppliers must submit bids electronically using the Canada Post epost Connect application. This service allows suppliers to submit bids, offers and arrangements electronically to PSPC Bid Receiving Units. Instructions for using E-Post are included in this solicitation.

Bids transmitted by facsimile or hardcopy to PWGSC will not be accepted.

2.3 Enquiries - Bid Solicitation

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

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

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

2.4 Applicable Laws

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

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

Refer to Annex "J1" for Deliverables/Certifications.

2.5 Optional Bidders' Conference

A bidders' conference call will be held on **Tuesday August 9, 2022, at 2PM (EDT)**.

The scope of the requirement outlined in the bid solicitation will be reviewed during the conference and questions will be answered. It is recommended that bidders who intend to submit a bid attend or send a representative.

Bidders are requested to communicate with the Contracting Authority before the conference to confirm attendance. Bidders should provide to the Contracting Authority, by email to Haitham.Abbas@pwgsc-tpsgc.gc.ca, the name(s) of the person(s) who will be attending no later than **Monday August 8, 2022, at 4PM (EDT)**. Without confirmation, the bidders' conference could be cancelled.

Any clarifications or changes to the bid solicitation resulting from the bidders' conference will be included as an amendment to the bid solicitation. Bidders who do not attend will not be precluded from submitting a bid.

2.6 Mandatory Site Visit - Vessel

It is mandatory that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for the site visit to be held at CCG Base of Prescott, 401 King St West, ON, K0E-1T0 on **August 9, 2022. The site visit will begin at 11:00 EDT**.

Bidders must communicate with the Contracting Authority no later than **Monday August 8, 2022, at 4PM (EDT)** to confirm attendance and provide the name(s) of the person(s) who will attend. Bidders will be required to sign an attendance sheet. Bidders should confirm in their bid that they have attended the site visit. Bidders who do not attend the mandatory site visit or do not send a representative will not be given an alternative appointment and their bid will be declared non-responsive. Any clarifications or changes to the bid solicitation resulting from the site visit will be included as an amendment to the bid solicitation.

2.7 Work Period - Marine

Work must commence and be completed as follows:

Commence: **September 20, 2022**
Complete: **November 20, 2022**

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

2.7.1 Additional Instructions to Work Period

1. The vessel will be manned during the work period and will be considered to be in commission. The vessel during that period will remain in the care or custody of Canada and under its control.
2. Fire fighting equipment must be readily accessible and made available by the Contractor should a fire emergency arise. The Contractor must take adequate precautions when burning or welding is carried out in compartments or other confined areas of the vessel.

The vessel must be made completely habitable for the ship's crew to return to the vessel November 20, 2022 to prepare for the vessel's commissioning, and to assist during the commissioning activities; set to work test and trials. For the vessel to be habitable, the ship's galley must be made operational, all crew lodgings must be cleaned and made ready for crew, washrooms and showers must be fully functional, potable water supplied, showers and bathrooms must be operational.

2.8 Equivalent Products

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

PART 3 - BID - PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

The Bidder must submit its bid electronically in accordance with section 08 of the 2003 standard instructions. The epost Connect system has a limit of 1GB per single message posted and a limit of 20GB per conversation.

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

Section I:	Technical Bid
Section II:	Financial Bid
Section III:	Certifications

Bids transmitted by facsimile or hardcopy will not be accepted

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

Section I: Technical Bid

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

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Financial Bid Presentation Sheet in Annex "H", and the detailed Pricing Data Sheet, Appendix 1 to Annex "H. The total amount of Applicable Taxes must be shown separately.

Section III: Certifications

Bidders must submit the certifications required under Part 5.

3.1.1 Unscheduled Work and Evaluation Price

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

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

Bidders are required to enter their own firm charge out rate for unscheduled work in Annex H, Sheet H1 Price for Evaluation. However, Canada will deem bids non compliant where bidders have entered a firm hourly charge out rate less than \$65/hr.

The Evaluation Price will be used for evaluating the bid. There is no minimum or maximum amount of unscheduled work nor is there a guarantee of such unscheduled work.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

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

Section I - Technical Bid / Certifications

Notwithstanding deliverable requirements specified within the bid solicitation and its associated Technical Specification Annex "A", mandatory deliverables that must be submitted with the Bidder's bid to be deemed responsive are summarized in Annex J – Deliverables / Certifications – J1 Mandatory Tender Deliverables Check List.

Section II - Financial Bid

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

Section III - Certifications

Bidders must submit the certifications required under Part 5 – Certifications.

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

4.1.1 Evaluation of Price

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

4.2 Basis of Selection

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

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

4.3. Deliverables after Contract Award

Refer to Annex "J2".

PART 5 - CERTIFICATIONS

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

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

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

5.1 Certifications Required Precedent to Contract Award

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

5.1.1 Integrity Provisions - Declaration of Convicted Offences

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

5.1.2 Federal Contractors Program for Employment Equity - Bid Certification

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

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

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

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

PART 6 - FINANCIAL AND OTHER REQUIREMENTS

6.1 Financial Capability

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

6.2 Contract Financial Security

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

- a) In Annex "H", the type of Contract Financial Security the Bidder intends to provide if awarded the Contract; and
- b) In Annex H "Financial Bid Presentation Sheet", the cost to the Bidder of the Contract Financial Security.

Refer to Annex "J1, J2" for Deliverables/Certifications

6.2.2 If this bid is accepted, the Bidder shall be required to provide the Contract Financial Security in accordance with 7.13 within **(5) five Working Days** after the date of contract award.

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

6.3 Docking Facility

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

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

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

Refer to Annex "J1" for Deliverables/Certifications

6.4 Workers' Compensation - Letter of Good Standing

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

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

Refer to Annex "J1" for Deliverables/Certifications.

6.5 Valid Labour Agreement

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

Refer to Annex "J1" for Deliverables/Certifications

6.6 Preliminary Work Schedule

At the time of bid closing the Bidder must submit to Canada one (1) hard copy and one (1) electronic copy of its preliminary production work schedule. This schedule is to show the commencement and completion dates for the Work in the available work period, including realistic target dates for significant events. This schedule will be reviewed with the successful Bidder at the Pre-Refit Meeting.

The preliminary work schedule(s) submitted must be produced with a commercially available project management software, either MS Project or equivalent approved by the TA, that is able to track tasks, predecessors, critical path, milestone markers, and labour loading. The schedule must show the anticipated work break down to the system and component level.

The Contractor's Work schedule must include (as a minimum) target dates for each of the following significant events:

- a) Commencement of Work as defined at Article 7.3.1
- b) Period to be in Dry-Dock
- c) All priced work items listed in Annex H Appendix 1
- d) FSR Scheduling for Priced Work Items
- e) Completion of Work as defined at Article 7.3.1
- f) Period of Care & Custody
- g) Dock and Sea Trials Period
- h) Resumption of custody by Canada

Refer to Annex "J1", Deliverables/Certifications.

6.7 Safety Measures for Fueling and Disembarking Fuel

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

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

Refer to Annex "J1", Deliverables/Certifications.

6.8 ISO 9001:2008 - Quality Management Systems

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

- If registered its valid ISO 9001-2008 certification;

- Example of Quality Control Plan (QCP) as per clause 6.17.

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

Refer to Annex "J1" for Deliverables/Certifications.

6.9 Health and Safety

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

Refer to Annex "J1" for Deliverable Requirements.

6.10 Fire Protection, Fire Fighting and Training Procedures

The Bidder must submit with its bid objective evidence that it has documented fire protection, fire fighting and training procedures compliant with current regulations and their insurance requirements. The fire protection, fire fighting and training procedures will, once accepted by Canada, form part of the Contract. Please refer to clause 7.27. If this information is not provided with the bid it will render the bid non-responsive.

Refer to Annex "J1" for Deliverable Requirements.

6.11 Hazardous Waste

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

6.12 Insurance Requirements

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

Refer to Annex "J1", Deliverables/Certifications.

6.13 Welding Certification

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

- a. CSA\ACNOR W47.1- latest edition, Certification for Companies for Fusion Welding of Steel (Division Level 2); and
- b. CSA\ACNOR W47.2 – latest edition, Certification for Companies for Fusion Welding of Aluminum (Division Level 1 or 2).

The bidder shall submit proof of certification with the bid. The certification shall remain valid for the duration of the contract. If this information is not provided with the bid it will render the bid non-responsive.

Proof of Certification for Companies for Fusion Welding of Aluminum is not required with the bid but must be readily available before the commencement of any fabrication work, and upon request from the Technical Authority. The certification shall remain valid for the duration of the contract.

Refer to Annex " J1" for Deliverables/Certifications.

6.14 Project Management Services

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

1. Intent

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

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

(c) Project Management encompasses the direction and control of such functions as engineering, planning, purchasing, manufacturing, assembly, overhauls, installations and test and trials.

2. Project Manager

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

(b) The PM must have experience in managing a project of this nature.

3. Project Management Team

Other than the Project Manager, the Contractor must assign and vary other job descriptions to suit its organization; provided however that the collective resume of its Project Management must provide for the effective control of the project elements including but not limited to:

- i. Project Management
- ii. Quality Assurance
- iii. Planning and Scheduling

4. Tender Deliverable

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

5. Reports

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

- i. Production Work Schedule
- ii. Inspection Test Plan Summary
- lii. Growth Work Summary
- iv. Risk Register

Refer to Annex "J1" for Deliverables/Certifications.

6.15 List of Proposed Subcontractors

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

Refer to Annex "J1" for Deliverables/Certifications.

6.16 Quality Control Plan

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

Refer to Annex "J1" for Deliverables/Certifications.

6.17 Inspection and Test Plan

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

Refer to Annex "J1" for Deliverables/Certifications.

6.18 Environmental Protection

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

Refer to Annex "J1" for Deliverables/Certifications.

PART 7 - RESULTING CONTRACT CLAUSES

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

7.1 Requirement

The Contractor must:

- a) carry out the docking, maintenance and alterations of the Canadian Coast Guard Vessel **CCGS Mangystau-2** in accordance with the associated Technical Specifications detailed in the Requirement and attached as Annex "A".
- b) carry out any unscheduled work authorized by the Contracting Authority.

7.2 Standard Clauses and Conditions

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

7.2.1 General Conditions

[2030](#) (2022-05-12), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

2030 (2022-05-12) General Conditions Higher Complexity - Goods are hereby amended as follows:

Section 22 Warranty

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

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

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

7.2.2 Supplemental General Conditions

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

[1029](#) (2018-12-06) Ship Repairs, apply and form part of the Contract.

7.3 Term of Contract

7.3.1 Work Period - Marine

1. Work must commence and be completed as follows:

Commence: September 20, 2022
Complete: November 20, 2022

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

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

- a) Canada gives 10 calendar days advance notice of a 15 day maximum delay.
The Contractor may claim no additional cost when arrival of the vessel at the Contractor's facility is delayed up to a maximum of 15 calendar days beyond the commencement date, above. The Completion Date shall be extended by a period equal to the length of the delay.
- b) Canada does not provide 10 calendar days advance notice of a delay.
The Completion Date shall be reasonably adjusted to reflect the impact of the delay on the arrival of the Vessel and Canada shall pay only the Daily Services Fee referred to in the Basis of Payment for the period of the delay.

7.3.2 Additional Instructions to Work Period

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

The vessel must be made completely habitable for the ship's crew to return to the vessel November 20, 2022 to prepare for the vessel's commissioning, and to assist during the commissioning activities; set to work test and trials. For the vessel to be habitable, the ship's galley must be made operational, all crew lodgings must be cleaned and made ready for crew, washrooms and showers must be fully functional, potable water supplied, showers and bathrooms must be operational.

From the time that the crew has returned to the vessel to the end of the working period (November 20, 2022), the vessel will be manned, and will be considered in commission. The vessel during this period will be in the care and custody of the Canada Coast Guard and under its control.

Pour obtenir de plus amples renseignements, veuillez-vous reporter à l'annexe I – Garde du navire, appendices 1 – Certificat d'acceptation.

Pour obtenir de plus amples renseignements, veuillez-vous reporter à l'annexe I – Garde du navire, appendices 2 – Certificat d'acceptation.

7.3.3 Time is of the Essence

Refer to SACC Manual Clause 2030 (2022-05-12), sub-section 10, Time is of the Essence.

7.4 Authorities

7.4.1 Contracting Authority

The Contracting Authority for the Contract is:

Haitham Abbas
Department of Public Works and Government Services Canada (PWGSC)
Marine Sector
PWGSC, 6A2 Place du Portage, Phase III
11 Laurier Street,
Gatineau, Quebec, K1A 0S5
Tel: (819) 955-1436
E-Mail: Haitham.Abbas@pwgsc.gc.ca

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

7.4.2 Technical Authority

The Technical Authority for the Contract is:

Name will be determined at Contract Award

Name:	_____
Telephone:	_____
Cell:	_____
E-mail:	_____

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

7.4.3 Inspection Authority

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

Name will be determined at Contract Award

Name: _____
Telephone: _____
Cell: _____
E-mail: _____

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

7.5 Payment

7.5.1 Basis of Payment - Firm Price

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

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

7.5.2 Terms of Payment - Progress Payment

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

time during the performance of the Work. Any overpayment resulting from progress payments or otherwise must be refunded promptly to Canada.

7.5.3 Liens - Section 427 of the Bank Act

SACC Manual Clause [H4500C](#) (2010-01-11) Liens - Section 427 of the Bank Act

7.5.4 Limitation of Price

SACC Manual Clause [C6000C](#) (2017-08-17) Limitation of Price

7.5.5 Time Verification

SACC Manual Clause [C0711C](#) (2008-05-12) Time Verification

7.6 Invoicing Instructions

The Contractor must submit invoices in accordance with the information required in Section 13 of SACC 2030 (2022-05-12), General Conditions, Higher Complexity, Goods, Article 7.5 Payment and Article 7.6 Invoicing Instructions.

7.6.1 Invoices

1. Invoices are to be made out to:

Canadian Coast Guard Marine Engineering
TBD

And;

The original invoice to be forwarded for verification to:

Public Works and Government Services Canada
Marine Systems Directorate
Ship Refit Division
6A2 Place du Portage, Phase III
11 Laurier Street
Gatineau, Quebec K1A 0S5
Attention: Haitham Abbas

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

7.6.2 Invoicing Instructions - Progress Claim

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

Each claim must show:

- (a) all information required on form PWGSC-TPSGC 1111;
- (b) all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;

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

The Contracting Authority will then forward the original and two (2) copies of the claim to the Contracting Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.
4. The Contractor must not submit claims until all work identified in the claim is completed.

7.6.3 Warranty Holdback

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

7.7 Certifications

7.7.1 Compliance

Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

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

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

7.9 Applicable Laws

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

7.10 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](#), (2018-12-06), Ship Repairs;

- (c) the General Conditions [2030](#), (2022-05-12), General Conditions - Higher Complexity - Goods
- (d) the General Conditions [1031-2](#), (2012-07-16), Contract Cost Principles;
- (e) Annex "K", Bidders Questions and Answers
- (f) Annex "A", Statement of Work;
- (g) Annex "B", Basis of Payment;
- (h) Annex "C", Federal Contractors Program for Employment Equity - Certification;
- (i) Annex "D", Insurance Requirements;
- (j) Annex "E", Warranty;
- (k) Annex "F", Procedure for Unscheduled Work;
- (l) Annex "G", Quality Control/Inspection;
- (m) Annex "H", Financial Bid Presentation Sheet;
- (n) Annex "I", Vessel Custody
- (o) Annex "J", Deliverables/Certifications
- (p) the Contractor's bid dated _____ (insert date of bid), as amended _____ (insert date(s) of amendment(s) if applicable)

7.11 Insurance Requirements

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

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

The Contractor must forward to the Contracting Authority within **five (5) working days** after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. Coverage must be placed with an Insurer licensed to carry out business in Canada. The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

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

7.13 Financial Security

7.13.1 Term of Financial Security

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

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

7.13.2 Contract Financial Security

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

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

OR

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

Any bond must be accepted as security by one of the bonding companies listed in Treasury Board Contracting Policy, Appendix L, Acceptable Bonding Companies (<https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494>). The bond forms mentioned in (a) above are available at: <http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>.

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

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

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

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

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

6. When Canada so converts the security deposit:

(a) the proceeds will be used by Canada to complete the Work according to the conditions of the Contract, to the nearest extent that it is feasible to do so and any balance left will be returned to the Contractor on completion of the warranty period; and

(b) if Canada enters into a contract to have the Work completed, the Contractor will:

(i) be considered to have irrevocably abandoned the Work; and

(ii) remain liable for the excess cost of completing the Work if the amount of the security deposit is not sufficient for such purpose. "Excess cost" means any amount over and above the amount of the Contract Price remaining unpaid together with the amount of the security deposit.

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

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

9. In this Article,

"security deposit" means

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

"approved financial institution" means

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

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

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

"irrevocable standby letter of credit"

- (a) means any arrangement, however named or described, whereby a financial institution (the "Issuer"), acting at the request and on the instructions of a customer (the "Applicant"), or on its behalf,
 - (i) will make a payment to or to the order of Canada, as the beneficiary;
 - (ii) will accept and pay bills of exchange drawn by Canada;
 - (iii) authorizes another financial institution to effect such payment, or accept and pay such bills of exchange; or
 - (iv) authorizes another financial institution to negotiate, against written demand(s) for payment, provided that the conditions of the letter of credit are complied with.
- (b) must state the face amount which may be drawn against it;

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

7.14 Foreign Nationals (Canadian Contractor)

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

7.15 Sub-contracts and Sub-contractor List

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

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

7.16 Work Schedule and Reports

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

The work schedule(s) submitted must be produced with a commercially available project management software, either MS Project or equivalent approved by the TA, that is able to track tasks, predecessors, critical path, milestone markers. The schedule must show the anticipated work break down to the system and component

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

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

7.17 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.

7.18 Trade Qualifications

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

7.19 ISO 9001:2008 - Quality Management Systems

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

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

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

7.20 Project Management Services

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

1. Intent

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

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

(c) Project Management encompasses the direction and control of such functions as engineering, planning, purchasing, manufacturing, assembly, overhauls, installations and test and trials.

2. Project Manager

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

(b) The PM must have experience in managing a project of this nature.

3. Project Management Team

Other than the Project Manager, the Contractor must assign and vary other job descriptions to suit its organization; provided however that the collective resume of its Project Management must provide for the effective control of the project elements including but not limited to:

- i. Project Management
- ii. Quality Assurance
- iii. Planning and Scheduling

4. Reports

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

- i. Production Work Schedule
- ii. Inspection Test Plan Summary
- lii. Growth Work Summary
- iv. Risk Register

7.21 Quality Control Plan

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

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

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

Refer to Annex "G" for details.

7.22 Inspection and Test Plan

The Contractor must in support of its Quality Control Plan (QCP), implement an approved Inspection and Test Plan (ITP). The ITP must be made available to the Inspection and Technical Authority for review and approval **within five (5) working days** after Contract award.

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

Refer to Annex "G" for details.

7.23 Equipment/Systems: Inspection/Test

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

Refer to Annex "G" for details.

7.24 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. The contractor must maintain in force their Environmental Protection procedures through the course of the contract.

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

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

7.25 Hazardous Waste

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

7.26 Supervision of Fueling and Disembarking Fuel

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

All fueling and disembarking of fuel on **CCGS Mangystau-2** must be done in accordance with the Contractor's submitted and accepted procedures.

7.27 Fire Protection, Fire Fighting and Training

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

7.28 Loan of Equipment - Marine

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

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

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

Refer to Annex "J2" for Deliverables/Certifications.

7.29 Welding Certification

1. The Contractor must ensure that welding is performed by a welder certified by the Canadian Welding Bureau (CWB) in accordance with the requirements of the following Canadian Standards Association (CSA) standards:

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

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

3. Before the commencement of any fabrication work, and upon request from the Technical Authority, the Contractor must provide approved welding procedures and/or a list of welding personnel 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.

7.30 Procedures for Design Change or Additional Work

SACC Manual Clause [B5007C](#) (2010-01-11) Procedures for Design Change or Additional Work

In addition, refer to Annex "F".

7.31 Vessel Manned Refits

1. The vessel will be manned during the work period and will be considered to be in commission. The vessel during that period will remain in the care or custody of Canada and under its control.

2. Fire fighting equipment must be readily accessible and made available by the Contractor should a fire emergency arise. The Contractor must take adequate precautions when burning or welding is carried out in compartments or other confined areas of the vessel.

The vessel must be made completely habitable for the ship's crew to return to the vessel November 21, 2022 to prepare for the vessels commissioning, and to assist during the commissioning activities; set to work test and trials For the vessel to be habitable, the ship's galley must be made operational, all crew lodgings must be cleaned and made ready for crew, washrooms and showers must be fully functional, potable water supplied, showers and bathrooms must be operational.

Refer to Annex "I" for details.

7.32 Pre-Refit Meeting

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

7.33 Progress Meetings

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

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

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

7.34 Outstanding Work and Acceptance

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

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

7.35 Scrap and Waste Material

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

7.36 Stability

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

7.37 Vessel Access by Canada

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

7.38 Title to Property - Vessel

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

The Contract is a defence contract within the meaning of the Defence Production Act, R.S.C. 1985, c. D-1, and must be governed accordingly.

Title to the Work or to any materials, parts, work-in-process or finished work must belong to Canada free and clear of all claims, liens, attachments, charges or encumbrances. Canada is entitled, at any time, to remove, sell or dispose of the Work or any part of the Work in accordance with section 20 of the Defence Production Act.

7.39 Workers Compensation

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

7.40 Dispute Resolution

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

- (a) Disputes arising from this Contract will in the first instance be resolved by the Contracting Authority and the Contractor's Contract Administrator within 15 working days or such additional time as may be agreed to by both parties.
- (b) Failing resolution under (a) above, the Manager of the Ship Refit Division (MD) of the Marine Systems Directorate at PWGSC and the Contractor's Representative Supervisor will attempt to resolve the dispute within an additional fifteen (15) working days.
- (c) Failing resolution under (a) or (b) above, the Senior Director of the Marine Systems Directorate at PWGSC, and the Contractor's Senior Management will attempt to resolve the dispute within an additional thirty (30) working days.

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

7.41 Failure to Deliver

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

7.42 Care, Custody and Control

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

7.43 Permits, Licenses and Certificates

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

7.44 Export Licenses

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

7.45 Equivalency of Equipment

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

otherwise would have been covered by the warranty.

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

7.46 Travel and Living Expenses - National Joint Council Travel Directive

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

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

All payments are subject to government audit.

7.47 Government Supplied Material

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

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

Any GSM must be received by the Contractor and stored in a secure warehouse or storeroom having a controlled environment appropriate for the equipment as per manufacturer's instructions. The Contractor shall repair or replace at its own expense GSM that is damaged or lost while in the Contractor's care.

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

Contractor must refer to Annex A for listed GSM.

Solicitation No. - N° de l'invitation
F7044-220251/A
Client Ref. No. - N° de réf. du client
F7044-220251

Amd. No. - N° de la modif.
File No. - N° du dossier
040md F7044-220251

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

ANNEX A - STATEMENT OF WORK - SPECIFICATIONS

CCGS Mangystau-2

(Attached as separate document)

ANNEX B - BASIS OF PAYMENT

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

B1 Contract Firm Price

A)	Known Work For work as stated in PART 7 - article 7.1, specified in Annex A and detailed in the attached Annex H – Appendix 1 - Pricing Data Sheet for the FIRM PRICE of:	\$
B)	Applicable taxes of line A) only:	\$
C)	Cost of Financial Security	\$
D)	Total firm Price including Applicable Taxes [A+B+C]	\$

B2 Unscheduled Work

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

"Number of hours (to be negotiated) X \$ _____, being the Contractor's firm hourly charge-out labour rate which includes overhead, consumables, and profit, plus net laid-down cost of materials to which will be added a mark-up of 10%, plus applicable taxes, 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."

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

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

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

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

Pro-rated Prices Unscheduled Work

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

B3 Overtime

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

For unscheduled work, the Contractor will be paid the authorized overtime hours at the following charge-out labour rates, plus the following premium rates:

a. Time and One Half**: \$ _____

per hour

b. Double Time***: \$ _____ per hour

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

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

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

** Time and One Half is defined as time in excess of the Regular Time*.

*** Double Time is defined as Sundays and Statutory Holidays.

B4 Daily Services Fee

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

The firm daily services fee is:

a. For a Working Day: \$ _____

b. For a Non-Working Day: \$ _____

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

B5 Vessel, Refit, Repair or Docking Cost

The following costs must be included in the price:

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

B5.2: Docking and Undocking include:

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

Unless specified otherwise, the vessel will be delivered by Canada to the successful Bidder's facility alongside a mutually agreed safe transfer point, afloat and upright, and the successful Bidder will do

the same when the Work is completed. The cost of services to tie up the vessel alongside and to cast off must be included in the evaluation price.

B5.3: Field Service Representatives/Supervisory Services: include all costs for field service Representatives / supervisory services including manufacturers' representatives, engineers, etc. The Contractor is responsible for the performance of all subcontractors and FSRs.

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

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

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

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

B6 Pricing Data Sheets

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

ANNEX C to PART 5 - BID SOLICITATION

FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY – CERTIFICATION

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

For further information on the Federal Contractors Program for Employment Equity visit Employment and Social Development Canada (ESDC) – Labour's website
(http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page).

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

Complete both A and B.

A. Check only one of the following:

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

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

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

OR

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

B. Check only one of the following:

- B1. The Bidder is not a Joint Venture.

OR

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

ANNEX D – INSURANCE REQUIREMENTS

D1 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 Canadian Coast Guard and Public Works and Government Services Canada for any and all loss of or damage to the vessel, however caused.
 - c. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of cancellation.
 - d. Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
 - e. Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

D2. Commercial General Liability Insurance

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$10,000,000 per accident or occurrence and in the annual aggregate.
2. The Commercial General Liability Insurance policy must include the following:
 - a. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.
 - b. Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.
 - c. Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.
 - d. Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
 - e. Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
 - f. Employees and, if applicable, Volunteers must be included as Additional Insured.
 - g. Employers' Liability (or confirmation that all employees are covered by Worker's Compensation (WSIB) or a similar program)

- h. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority with 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 twelve (12) months after the completion or termination of the Contract. Employees and, if applicable, Volunteers must be included as Additional Insured.
- j. Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.
- k. Sudden and Accidental Pollution Liability (minimum 120 hours): To protect the Contractor for liabilities arising from damages caused by accidental pollution incidents.

D3. Environmental Impairment Liability Insurance

1. The Contractor must obtain Contractor's Pollution Liability insurance, providing coverage for Asbestos Abatement, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$5,000,000 per accident or occurrence and in the annual aggregate.
2. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
3. The Contractor's Pollution Liability insurance coverage provided under the remarks section above) policy must include the following:
 - a. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.
 - b. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
 - c. Separation of Insureds: The policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
 - d. Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
 - e. Incidental Transit Extension: The policy must extend to losses arising from any waste, products or materials transported, shipped, or delivered via any transportation mode to a location beyond the boundaries of a site at which the Contractor or any entity for which the Contractor is legally liable is performing or has performed the operations described in the contract.
 - f. Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

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

For other provinces and territories, send to:

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

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

ANNEX E – WARRANTY

Warranty Procedures

E1. Scope

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

E2. Reporting Failures with Warranty Potential

- a. The initial purpose of a report of a failure is to facilitate the decision as to whether or not to involve warranty and to generate action to effect repairs. Therefore in addition to identification, location data, etc. the report must contain details of the defect. Warranty decisions as a general rule are to be made locally and the administrative process is to be in accordance with procedures as indicated.
- b. These procedures are necessary as invoking a warranty does not simply mean that the warrantor will automatically proceed with repairs at his expense. A review of the defect may well result in a disclaimer of responsibility, therefore, it is imperative that during such a review the Department is directly represented by competent technical authority qualified to agree or disagree with the warrantor's assertions. Since the INSPECTION AUTHORITY has the closest and most active involvement of the contracted work completed this agency must assume this role.

E3. 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 Appendix 1 – Warranty Claim Form Annex D and forward the original to the Contractor for review with a copy to the PWGSC contracting Authority. If the PWGSC Contracting or INSPECTION AUTHORITY is unable to support warranty action, the Defect Claim Form will be returned to the originator with a brief justification. (It is to be noted that in the latter instance PWGSC will inform the Contractor of its decision and no further action will be required of the Contractor.

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

- iii. Assuming the Contractor accepts full responsibility for repair, the Contractor completes Section 2 and 3 of the Warranty Claim Form, returns it to the INSPECTION AUTHORITY who confirms corrective action has been completed, and who then distributes the form to the Technical Authority and the PWGSC Contracting Authority.
- b. In the event that the Contractor disputes the claim as a warranty defect, or agrees to share, the Contractor is to complete Part 2 and 3 of the Warranty Claim Form with the appropriate information and 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.

E4. 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 paragraphs E.3.b and E,3,c, 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.

E5. Alongside Period For Warranty Repairs and Checks

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

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

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

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ANNEX E – APPENDIX 1

		Travaux publics et Services gouvernementaux Canada	Public Works and Government Services Canada		
APPENDIX 1 TO ANNEX E					
WARRANTY CLAIM FORM (Refit)					
FORMULAIRE DE RÉCLAMATION DE GARANTIE (Radoub)					
Vessel Name - Nom du navire		File No. - No. du dossier		Contract No. - No. du contrat	
Customer Department - Ministère client				Warranty Claim Serial No. No. de série de réclamation de garantie	
Defect's Impact on Vessel's Operations Conséquence du défaut sur les opérations du navire			The Defect Must Be Corrected; Le défaut doit être corrigé;		
Vessel out of service Navire hors d'usage	Vessel Limited Operation Opération réduite du navire	No immediate consequence Sans conséquence immédiate	Immediately Immédiatement	When directed by Canada Tel qu'avisé par le Canada	To be agreed between Canada and Contractor À être entendue entre le Canada et l'entrepreneur
1. Description of the Defect - Description du défaut					
Note: This section must be filled by Technical Authority (TA) in consort with the Ship's Staff (on site responsible) . On a determination of a valid claim, the TA will forward the claim to the Contractor and CC the Contracting Authority (CA). - Cette section doit être complétée par l'Autorité Technique conjointement avec l'équipage (responsable sur place). Si la réclamation est jugée valable l'AT transmettra la réclamation à l'entrepreneur avec copie à l'Autorité Contractante (AC).					
Reference to Contract Article and/or Specification No. Référence à l'article du contrat et/ou devis no.					
Description					
Prepared by the on site responsible Préparé par le responsable sur place			Date		
			Approved by Technical Authority Approuvé par l'Autorité Technique		
			Date		

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2. Contractor's Investigation and Position - Examen et position de l'entrepreneur	
Note: The Contractor must investigate the claim , determine its position, complete this section 2 and return the claim to the TA and cc the CA. - L'entrepreneur doit faire l'examen de la réclamation, déterminer sa position, compléter la présente section 2 et retourner la réclamation l'AT avec copie à l'AC.	
Contractor recognizes its total responsibility and will proceed with corrective action(s) L'entrepreneur reconnaît son entière responsabilité et corrigera le défaut	
Provide details on action(s) to take place with date and location. Fournir les détails de(s) action(s) qui seront prise ainsi que la date et le lieu.	
Contractor recognizes a partial responsibility. L'entrepreneur reconnaît une responsabilité partielle.	
Provide details supporting the above position with proposed sharing. Fournir les détails justifiant la position ci-dessus ainsi que le partage proposé.	
Contractor disclaims any responsibility. L'entrepreneur refuse toute responsabilité.	
Provide details supporting the above position. Fournir les détails justifiant la position ci-dessus	
Contractor's representative Représentant de l'entrepreneur	Date

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3. PWGSC - CA's decision in case of Contractor partial responsibility or disclaim of responsibility - Décision de l'AC de TPSGC en cas de reponsabilité partagée ou de refus de responsabilité de la part de l'entrepreneur.					

Reasons supporting PWGSC- CA 's decision.
Raisons justifiant la décision de l'AC de TPSGC

4. Costs record if requested by PWGSC-CA - Annotation des coûts si requis par l'AC de TPSGC					

When requested by the PWGSC-CA the customer department must record in this section the costs associated to the repair of the defect.
Lorsque demandé par l'AC de TPSGC le ministère client doit annoter dans cette section les coûts associés à la réparation du défaut.

Confirmed by the Technical Authority
Confiriné par l'Autorité Technique

Date

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5. Work Acceptance and Warranty Claim Closing - Acceptation des travaux et fermeture de la réclamation de garantie

Valid claim corrected by the Contractor and work accepted by Canada - Réclamation valable corrigée par l'entrepreneur et travaux acceptés par le Canada

Remarks Remarques			
Contractor's representative - Représentant de l'entrepreneur		Inspection Authority - Autorité d'inspection	
Date		Date	

Valid claim corrected by the Contractor and Canada and work accepted by Canada - Réclamation valable corrigée par l'entrepreneur et le Canada et travaux acceptés par le Canada

Remarks Remarques			
Contractor's representative - Représentant de l'entrepreneur		Inspection Authority - Autorité d'inspection	
Date		Date	
Technical Authority - Autorité technique		Contracting Authority - Autorité contractante	
Date		Date	

Valid claim corrected by Canada and work accepted by Canada - Réclamation valable corrigée par le Canada et travaux acceptés par le Canada
--

Remarks Remarques			
Inspection Authority - Autorité d'inspection		Technical Authority - Autorité technique	
Date		Date	
Contracting Authority - Autorité contractante			
Date			

Invalid claim - Réclamation non fondée

Remarks Remarques			
Technical Authority - Autorité technique		Contracting Authority - Autorité contractante	
Date		Date	

ANNEX F – PROCEDURE FOR UNSCHEDULED WORK

F1. Purpose

The unscheduled work Procedure has been instituted for the following purposes:

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

F2. Definitions

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

F3. Procedures

- a. The procedure involves the electronic form PWGSC 1379 for refit and repair and will be the only form for authorizing all unscheduled work.
- b. Emergency measures required to prevent loss or damage to the Vessel which would occur if this procedure were followed, shall be taken by the Contractor on its own authority. The responsibility for the cost of such measures shall be determined in accordance with the terms and conditions of the Contract.
- c. The Technical Authority will initiate a work estimate request by defining the unscheduled work requirement. It will attach drawings, sketches, additional specifications, other clarifying details as appropriate, and allocate their serial number for the request.
- d. Notwithstanding the foregoing, the Contractor may propose to the technical Authority in writing either by letter or some type of Defect Advice Form (A Contractor owned form) that certain unscheduled work should be carried out.
- e. The Technical Authority will either reject or accept such proposal and advise the Contractor and Contracting Authority. Acceptance of the proposal is not to be construed as authorization for the work

to proceed. If required, the Technical Authority will then define the unscheduled work requirement in accordance with sub paragraph 3(c).

- f. The Contractor will electronically submit its proposal to the Contracting Authority together with all price support and any qualifications, remarks or other information as requested.
The price support shall demonstrate the relationship between the scope of work, the Contractor's estimated costs and its selling price. It is a breakdown of the Contractor's unit rates, estimates of person hours by trade, estimate of material cost per item for both the Contractor and all of its subcontractors including quotations, estimates and any related schedule impact and an evaluation of the Contractor's time required to perform the unscheduled work.
- g. The Contractor shall provide copies of purchase orders and paid invoices for subcontracts and/or material, including stocked items. The Contractor shall provide a minimum of two quotations for subcontracts or material. If other than the lowest or sole source is being recommended for quality and/or delivery considerations, this shall be noted. Upon request by the Contractor, the Contracting Authority shall be permitted to meet with any proposed subcontractor or material supplier for discussion of the price, and always with the Contractor's representative present.
- h. After discussion between the Contracting Authority and the Contractor and if no negotiation is required, the Contracting Authority will seek confirmation from the Technical Authority to proceed with the work by signing the form noted above in sub paragraph 3(d). The Contracting Authority will then sign and authorize the unscheduled work to proceed.
- i. In the event that the Technical Authority does not wish to proceed with the work, the Contracting Authority will cancel the proposed unscheduled work in writing.
- j. In the event the negotiation involves a credit, the appropriate PWGSC form will be noted accordingly.
- k. In the event that the Technical Authority requires unscheduled work of an urgent nature or an impasse has occurred in negotiations the commencement of unscheduled work should not be unduly delayed and should be processed as follows:
- The Contractor will complete PWGSC 1379 form indicating the estimated cost and provide it to the Contracting Authority.
 - If the Technical Authority wishes to proceed, both the Technical Authority and the Contracting Authority will sign the completed PWGSC form. It will be understood and accepted that this cost will be a ceiling price cost and therefore only subject to downward adjustment.
 - A serial number will be allocated and will include Suffix A.

The work will proceed with the understanding that following an audit of the Contractor's actual costs for completing the described work, the cost will be finalized at the ceiling price or lower, if justified by the audit. A new PWGSC form will then be completed with the finalized costs, signed and issued with the same Serial Number without the suffix "A", and bearing a notation that this form is replacing and canceling the form having the same Serial Number with the suffix "A".

NOTE: PWGSC forms bearing serial numbers with a suffix A shall not be included in any contract amendments and therefore no payment shall be made until final resolution of the prices and subsequent incorporation into the contract have been completed.

F4. Amendment to Contract or Formal Agreement

The contract will be amended from time to time in accordance with the contract terms in order to incorporate costs that have been authorized on the proper PWGSC form(s).

ANNEXE G – QUALITY CONTROL/INSPECTION

G1 Quality Control Plan

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

The documents referenced in the QCP must be made available within two (2) working days as and when requested by the Inspection Authority. The Contractor must make appropriate amendments to the QCP throughout the term of the Contract to reflect current and planned quality activities. Amendments to the QCP must be acceptable to the Inspection Authority and the Technical Authority.

G2 Inspection and Test Plan (ITP)

1. The Contractor must prepare an Inspection and Test Plan (ITP) comprising individual inspection and test plans for each specification item of this project in accordance with the Quality Standard and its Quality Control Plan (QCP). The ITP must be submitted to the Inspection Authority for review and amended by the Contractor to the satisfaction of the Inspection Authority.
 - a. Each ITP must contain all inspection points identified in the Specification highlighting any mandatory points that must be witnessed by the Inspection Authority and other “hold” points imposed by the Contractor to ensure the quality of the work.
 - b. Milestone delivery date for the ITP is given in the Contract however individual ITPs should be forwarded for review as developed.
2. Coding:
 - a. Each ITP is to be coded for identification clearly demonstrating a systematic approach similar to the following (Contractor’s system should be defined in its QCP):
 - i. Prefixes for Inspections, Tests 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 test – i.e.: 3H-10-01
 - b. Specification items followed by assigned sequence numbers for inspection processes within each Specification item; and
 - c. Cross reference to a verification document number.

G3 Inspection and Test Plan Criteria

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

1. All ITPs must be prepared by the Contractor in accordance with the above criteria, its quality plan and must provide the following reference information:
 - a. the ship’s name;
 - b. the specification number item;

- c. equipment/system description and a statement defining the parameter which is being inspected;
 - d. a list of applicable documents referenced or specified in the inspection procedure;
 - e. the inspection, test or trial requirements specified in the specification;
 - f. the tools and equipment required to accomplish the inspection;
 - g. the environmental conditions under which the inspections are to be conducted and the tolerances on the inspection conditions;
 - h. 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;
 - i. name and signature of the person who prepared the plan, date prepared and amendment level;
- and
- j. names and signatures of the persons conducting and witnessing the inspection, test or trial.
2. Contractor Imposed Testing:
- a. Tests and trials in addition to those given in the specification must be approved by the Inspection Authority.
 - b. Amendments: Amendment action for the ITPs must be ongoing throughout the refit and reflect the inspection requirements for unscheduled work. Amendments must be submitted as developed, but not less frequently than once every second week.

G4 Conduct of Inspection

1. Inspections must be conducted in accordance with the ITP and as detailed in G4.
2. The Contractor must provide its own staff or subcontracted staff to conduct inspections, test and trials; excepting that Technical Authority or Inspection Authority personnel may be designated in the specification in which case the Contractor must ensure that its own staff are provided in support of such inspection, test and/or 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 and/or trial.
4. The Contractor must ensure that personnel required for equipment operation and records taking during the inspection, test and/or trial are briefed and available at the start and throughout the duration of the inspection, test and/or 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 and/or trial and ensure that safe conditions prevail throughout the inspection, test and/or trial.

G5 Inspection Records and Reports

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

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

G6 Inspection and Trials Process

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

NOTE: 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/or trials as may be deemed necessary by the Inspection Authority to permit them to certify that the work has been performed in compliance with the provisions of the specification. The Contractor must be responsible for notifying the designated Inspection Authority of when the work will be available for inspection sufficiently in advance to permit the designated Inspection Authority to arrange for the appropriate inspection.
 - b. The Inspection Authority will inspect the materials, equipment and work throughout the project against the provisions of the specification and where non-conformances are noted, will issue appropriate inspection non-conformance reports (NCR).
 - c. The Contract requires the implementation of a Quality Assurance/Quality Control (QA/QC) system so the Inspection Authority requires the Contractor to 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 the reports of these inspections must be submitted before the Work is inspected by the PWGSC Inspection Authority.
 - d. Incorrect or false QA/QC documentation submitted to the Inspection Authority prior to inspection of the Work the Inspection Authority may issue an Inspection non-conformance report against the Work. In addition, a separate report may be issued against the Contractor's QA/QC system.
 - e. Before carrying out any inspection, the PWGSC Inspection Authority must review the requirements for the Work and the acceptance and/or rejections standards to be applied. Where more than one standard or requirement are applicable, the order of precedence in the Contract will identify the priority.

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 update the report with applicable signature and date.
- c. At completion 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 and in accordance with the Contract and specification, the Contractor must schedule, co-ordinate, perform and record all specified tests, trials and demonstrations required.
- b. Where the specification contains a specific performance requirements for any component, equipment, sub-system or system the Contractor must test each 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 perform as per specification.
- 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-system demonstrations or testing, and that the sub-systems are proven before system demonstration or testing.
- d. Where the specification does not contain specific performance requirements of 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 ITP as detailed in G2.
- f. The Contractor must co-ordinate each test, trial and demonstration with all interested parties including the Inspection Authority, Contracting and Technical Authorities, regulatory authorities, Classification Society, subcontractors etc. The Contractor must provide the Inspection Authority and other Crown Authorities with a minimum of five (5) working days notice of each scheduled test, trial or demonstration.
- g. The Contractor must keep written records of all tests, trials and demonstrations conducted as detailed in G5. The Contractor may utilize the PWGSC Standards Tests & Trials Record Sheets which can be customized by the Contractor to suit individual test or trial requirements. These record sheets are available from the Inspection Authority in digital format.
- h. The Contractor must in all respects be responsible for the conduct of all tests and trials in accordance with the requirements of the Contract.
- i. The Inspection Authority and the Technical Authority reserve the right to defer commencement of or continuation with any sea trials for any reasonable cause, including but not limited to:
 - a. adverse weather;
 - b. visibility
 - c. equipment failure or degradation;
 - d. lack of qualified personnel; and
 - e. inadequate or non-compliance with safety standards.

Annex H – FINANCIAL BID PRESENTATION SHEET

H1 Price for Evaluation

A)	<p>Known Work</p> <p>For work specified in Annex A – Statements of Work (CCGS Mangystau-2) and detailed in the attached ANNEX H – Financial Bid Presentation Sheet – Appendix 1 - Pricing Data Sheet (CCGS Mangystau-2) for a FIRM PRICE of:</p>	<p>\$ _____</p>
B)	<p>Unscheduled Work – Contractor labour cost</p> <p>Estimated labour hours at a firm charge out labour rate including overhead and profit for evaluation purposes only:</p> <p>5,000 person hours x \$ _____ per hour for a PRICE of: See Annex H, article H2.1 and H2.2 below. Any bid submitted with a charge out labour rate less than \$65/hr will be deemed non compliant. There is no minimum or maximum amount of unscheduled work nor is there a guarantee of such unscheduled work in the Contract.</p> <p>Overtime premium for time and one half: Estimated hours for evaluation purposes only: 500 person hours x \$ _____ per hour for a PRICE of: See Annex H, article H3 below.</p> <p>Overtime premium for double time: Estimated hours for evaluation purposes only: 300 person hours x \$ _____ per hour for a PRICE of: See Annex H, article H3 below.</p>	<p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p>
C)	<p>Daily Service Fees</p> <p>For evaluation purpose only as per Annex H, article H4:</p> <p>Ten (10) working days x \$ _____ firm daily service fee</p> <p>Four (4) non-working days x \$ _____ firm daily service fee</p>	<p>\$ _____</p> <p>\$ _____</p>
D)	<p>Vessel Transfer Cost</p> <p>For evaluation purpose only as per Annex H, article H6: Proposed shipyard/ship repair facility _____</p>	<p>\$ _____</p>
E)	<p>Cost of Financial Security as per 6.2</p> <p>Type of Financial Security (as per 6.2.1): _____</p>	<p>\$ _____</p>
F)	<p>EVALUATION PRICE</p> <p>[A + B + C + D + E] for an EVALUATION PRICE (applicable taxes excluded) of:</p>	<p>\$ _____</p>

H2 **Unscheduled Work**

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

Number of hours (to be negotiated) x \$ _____ for the Contractor's firm hourly charge-out labour rate. This rate is to include consumables, overhead and profit. The net laid-down cost of materials which may include a mark-up of ten (10) percent plus applicable taxes. The firm hourly charge-out labour rate and the material mark-up will remain firm for the duration of the Contract including any subsequent amendments.

- H2.1:** Notwithstanding definitions or usage elsewhere in the Contract or in the Contractor's Cost Management System, when negotiating hours for unscheduled work PWGSC will consider only those hours of labour directly involved in the production of the subject work package.
- H2.2:** Allowance for related labour costs such as management, all supervision, purchasing and material handling, quality assurance and reporting, first aid, gas free certification inspecting and reporting and estimating and preparing unscheduled work submissions will be included as overhead for the purposes of determining the charge-out labour rate as entered in section H2 above.
- H2.3:** The ten (10) percent mark-up rate for material will also apply to subcontracted costs. The mark-up rate includes any allowance for material and subcontract management not allowable in the charge out labour rate. The Contractor will not be entitled to a separate labour component for the purchase and handling of materials or subcontract administration.

Pro-rated Prices Unscheduled Work

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

H3 **Overtime**

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

For unscheduled work, the Contractor will be paid the authorized overtime hours at the following charge-out labour rates:

- a. Time and One Half^{**}: \$ _____ per hour;
- b. Double Time^{***}: \$ _____ per hour

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

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

* Regular time is defined as an 8 hour work day

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

*** Overtime Double Time Rate is defined as Sundays and Statutory Holidays Pro-rated Prices

H4 Daily Services Fees

In the event of a delay in the performance of the Work and if such delay is recognized and agreed upon by the Contracting Authority as being attributable to Canada, Canada agrees to pay the Contractor the daily service fee described below for each day the Work is delayed. This fee shall be the sole liability of Canada to the Contractor for the delay.

The firm daily services fee is:

- a. For a working day: \$ _____
- b. For a non-working day: \$ _____

The above fees shall include but not be limited to all aspects of the following costs: project management services, administrative support, production services, quality assurance, material support, planned maintenance and ship services and all other resources and direct costs required to maintain the vessel at the Contractor's facility. These fees are firm and not subject to any additional charges for mark up or profit.

H5 Vessel, Refit, Repair or Docking Costs

The following costs must be included in the price:

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

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

3. Field services representatives/supervisory services: consist of the costs for field service representatives and/or supervisory services including manufacturers' representatives, engineers, etc.

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

4. Removals: include all costs for removals necessary to carry out the Work and will be the responsibility of the successful Bidder regardless if they are identified in the specification, except those removals not apparent when viewing the vessel or examining the drawings. The successful Bidder will also be responsible for safe storage of removed items and reinstallation of all items on completion of the Work. The successful Bidder will be responsible for renewal of components damaged while in their custody including during removal or reinstallation.
5. Sheltering, staging, crange and transportation: include the cost of all sheltering, staging including handrails, carnage and transportation to carry out the Work as specified. The successful Bidder will be responsible for the cost of any necessary modification of these facilities in order to meet applicable safety regulations.

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F7044-220251/A
Client Ref. No. - N° de réf. du client
F7044-220251

Amd. No. - N° de la modif.
File No. - N° du dossier
040md F7044-220251

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

ANNEX H – Appendix 1 – PRICING DATA SHEET (CCGS Mangystau-2)

ATTACHED AS SEPARATE DOCUMENT

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ANNEX I – VESSEL CUSTODY (NOT USED)

**ANNEX J
 DELIVERABLES/CERTIFICATIONS**

J1 Mandatory Tender Deliverables Check List

Notwithstanding deliverable requirements specified within the bid solicitation and its associated Technical Specification (Annex A), mandatory deliverables that must be submitted with the Bidder's tender to be deemed responsive are summarized below.

The Bidder must submit a completed Annex "J1" Deliverables/ Certifications.

The following are mandatory and the Bidder's submission will be evaluated against the requirements as defined herein. The Bidder must be determined to be compliant on each item to be considered responsive.

Item	Description	Completed and Attached
1	Invitation To Tender document part 1 page 1 completed and signed;	
2	Completed Annex "H" Financial Bid Presentation Sheet", clauses H1 through H6;	
3	Completed Pricing Data Sheets, per clause 3.1 Section II, Annex "H", Appendix 1;	
4	Completed Annex "J1" Deliverables/Certifications;	
5	Changes to Applicable Laws (if any), as per clause 2.4	
6	Integrity Provisions - Associated Information, section 5.1.1	
7	Federal Contractors Program for Employment Equity, Complete section 5.1.2	
8	Contract Financial Security as per clause 6.2 and Annex "H"	
9	Vessel Transfer Cost, as per clause 6.3 and Annex "H"	
10a	Docking Facility, as per clause 6.4 - Certification	
10b	Docking Facility, as per clause 6.4 – capacity for equipment with vessel side accesses	
10c	Docking Facility, as per clause 6.4 – crange capacity	
11	Proof of good standing with Worker's Compensation Board, as per clause 6.5	
12	Proof of valid Labor Agreement or similar instrument covering the work period, as per clause 6.6	
13	Preliminary Work Schedule , per clause 6.7;	
14	Fueling and Disembarking Procedures, as per clause 6.8;	
15	If Registered its Valid ISO 9001-2008 Certification, as per clause 6.9	
16	Objective evidence of documented Health and Safety System, as per clause 6.10;	
17	Objective evidence of documented Fire Protection, Fire Fighting and Training Procedure, as per clause 6.11	
18	Insurance Requirements, as per clause 6.13	
19	Proof of welding certification, as per clause 6.14	
20	Project Management as per clause 6.15	
21	List of subcontractors, as per clause 6.16	
22	Example of its Quality Control Plan, as per clause 6.17	
23	Example of an Inspection and Test Plan as per clause 6.18	
24	Details of Environmental Emergency Response Plan, Details of Formal Environmental Training as per Clause 6.19	

J2 Deliverables after Contract Award

Item	Description	Reference	Due By
1	Insurance requirements as per Annex "D"	Clause 7.11 and Annex "D"	5 Working Days after contract award
2	Revised Work Schedule	Clause 7.16	5 Calendar day after contract award
3	Contract Financial Security	Clause 7.13	5 working days after contract award
4	The Contractor's Quality Control Plan	Clause 7.21	5 working days after contract award
5	The list of Government specialized loaned equipment that the Contractor intends to request.	Clause 7.28	3 working days after contract award

J3 Deliverables Prior to Contract Award (If Requested)

Item	Description	Reference	Due By
1	Financial Capability	Clause 6.1	5 Working Days prior to contract award if requested

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ANNEX K – Questions and Answers (Bidding Period)

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2022 , ALONGSIDE REFIT

CANADIAN COAST GUARD
NHQ LIB PROJECT



MV MANGYSTAU-2
PRESCOTT ALONGSIDE REFIT
SPECIFICATION
JULY 31- AUG 31, 2022

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GENERAL NOTES

G 1.1 Background:

The LIB (Mangystau 2) is a shallow draught icebreaking tug built in 2010 at STX RO Offshore Braila Shipyard for work in the Caspian Sea. The vessel was purchased and delivered to Canada in January 2022. The LIB was purchased as a replacement vessel for the Great Lakes area to cover the periods when the CCGS Griffon and the CCGS Samuel Risley are scheduled for Vessel Life Extension (VLE) refits. Mangystau 2 is classed with Bureau Veritas Classification society. The vessel will be located at CCG base Prescott, Ontario for this alongside refit.

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G 1.2 Vessel Particulars

Name:	CCG Mangystau- 2
Type:	Light Icebreaker Tug
Class:	Tug with icebreaking capability up to 0.6 m level ice thickness ✠AUT-UMS, ICE CLASS IA SUPER ✠MACH ✠HULL
Year Built:	2010
Principle Dimensions:	
Length:	62.02 m
Breadth, molded:	16.4 m
Loaded Draft:	3 m
Tonnage, displacement:	Gross Tonnage 1828, Net Tonnage 548
Propulsion	<i>Propelling type:</i> Electrical <i>Total power:</i> 4800 kW (6522 HP) <i>Propelling machinery:</i> 3 INDAR ACP-500-S/6 1201 rpm <i>Builder:</i> INDAR ELECTRIC SL <i>Date of build:</i> 05 Jul 2010 <i>Propeller:</i> 3 Solid Azimuth Thrusters , 300 rpm <i>Elec. installation:</i> 1 Generator 2125 kVA (1700 kW), 690 V, 60 Hz 3 Generators 2125 kVA (1700 kW), 690 V, 60 Hz 1 Emergency generator 294 kVA (235 kW), 440 V, 60 Hz <i>Thruster(s):</i> 2 forward thrusters 550 kW <i>Survey Type:</i> Normal

Mangystau- 2 complete 3D Imaging link and password is given below:

<https://mpembed.com/show/?m=Wv8u8A82ZL9&mpu=71&mpv=3Dportal>

Password : mangystau

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G 1.3 References

G 1.3.1 **Regulations**

G 1.3.1.1 The applicable Acts, Regulations, Rules, Codes and Standards for this specification are contained in Annex A ‘Acts, Regulations and Rules Applicable to CCGS Mangystau-2’ attached. Additional Standards and Codes that are applicable for individual specification items are listed in Annex –B. Both Annexes will be provided in a separate document.

G 1.3.1.2 The Contractor will ensure all work completed in the specification are done to all applicable federal and territorial regulations and standards. CCG procedures are to be followed if no other regulation takes precedence

G 1.3.2 **Guidance Drawings**

G 1.3.2.1 The following Drawings as defined in the Drawings section of the General Notes will be available on FTP site.

Drawing Number	DRAWING TITLE	Electronic File Name
740-731-100_B	Compressed Air System Scheme	740-731-100_B
740-581-010_B	Freshwater System Diagram	740-581-010_B
740-101-001_H	General Arrangement Rev. H	740-101-001_H
740-503-001_2	Fire and Safety Plan Rev.2	740-503-001_2
740-814-110_A	FIFI System Diagram, Rev. A	740-814-110_A
N740-452-100-106	Lifting Lugs outside of Mach Space	N740-452-100-106
N740-452-100-104_A	Lifting Lugs in Bow Thruster Room	N740-452-100-104_A
740-600-001_E	Machinery Arrangement	740-600-001_E
N740-452-100-101_D	Lifting Lugs in Engine Room	N740-452-100-101_D

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G 1.3.2 Tanks

G 1.3.1.1 Listed are the tanks found on board, their Location by frame number and capacity (Where available). These are to be used as reference only and will not supersede any specification.

Description	Location	Particulars	Coating
SEE TANK ARRANGEMENT PLAN			

G 1.3.3 Abbreviations

ACM: Asbestos Containing Material	MCA: Matériaux contenant de l'amiante
CA: Contracting Authority - Public Works and Government Services Canada	AC: Autorité Contractuelle - Travaux publics et Services gouvernementaux Canada
CFM: Contractor Furnished Material and/or Equipment	MFE: Matériaux ou équipements fournis par l'Entrepreneur
CLC: Canada Labour Code	CCT: Code canadien du travail
Class: Classification Society Approved by Transport Canada	Classe : Société de classification approuvée par Transports Canada
CSA: Canadian Standards Association	CSA: Association canadienne de normalisation - ACNOR
CWB: Canadian Welding Bureau	BCS: Bureau canadien du soudage
DSIP: Delegated Statutory Inspection Program	PDIO : Programme de délégation des inspections obligatoires
DFO/CCG: Department of Fisheries and Oceans, Canadian Coast Guard	MPO/ GCC: Ministère des Pêches et des Océans, Garde côtière canadienne
FRC: Fast Rescue Craft	ERS : Embarcation rapide de sauvetage
FSR: Manufacturer's Field Service Representative	RSF: Représentant de service du fabricant
FSSM or FSM: Fleet Safety and Security Manual	MSSF: Fleet Safety and Security Manual
GSM: Government Supplied Material and/or Equipment	MFG: Matériel fourni par le Gouvernement

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HC: Health Canada	SC: Santé Canada
IEEE: The Institute of Electrical & Electronic Engineers Inc.	IEEE: Institute of Electrical and Electronic Engineers
LT: Long Tonnes	LT: Tonnes anglaises
MSDS: Material Safety Data Sheet	FS: Fiche signalétique
NDT: Non-Destructive Testing	END: Essais non destructifs
OEM: Original Equipment Manufacturer	FEO: Fabricant d'équipement d'origine
OHS: Occupational Health and Safety	SST: Santé et sécurité au travail
PWGSC: Public Works and Government Services Canada	TPSGC: Travaux publics et Services gouvernementaux Canada
RO: Recognized Organization as defined by Canada Shipping Act.	OR: organismes reconnus par la Loi sur la marine marchande du Canada
SSMS: Safety and Security Management System	SGSS: Système de gestion de la sécurité et de la sureté
TBS: Treasury Board of Canada Secretariat	SCT: Secrétariat du Conseil du Trésor du Canada
TA: Technical Authority –LIB Project Manager or designate	AT: Autorité technique – Représentant du propriétaire (GCC)
TCMS: Transport Canada Marine Safety	SMTC: Sécurité Maritime de Transports Canada
IA: Inspection Authority – CCG delegated.	AI: Autorité de l'Inspection – Inspecteur technique (GCC)
WCB: Workers' Compensation Board	CNESST: Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST)
WHMIS Workplace Hazardous Materials Information System	SIMDUT: Système d'information sur les matières dangereuses utilisées au travail

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G 1.4 Conditions and Definitions

G 1.4.1 The following conditions and definitions are applicable to all work contained in the Specifications and are intended to outline the quality of workmanship and practice that is the minimum acceptable level:

- a) Additional Work Procedures The words "Additional Work Procedures" means the procedures as defined in ANNEX F - PROCEDURE FOR PROCESSING UNSCHEDULED WORK and includes any additional work required on a system, sub-system or equipment which the original specification did not specify;
- b) Calibrate The word "calibrate" means the adjustment of readings and measurements to a known standard;
- c) Disconnect The word "disconnect" means the Contractor must mechanically and electrically disconnect the piece of equipment of all piping, wiring, seatings and other attachments permitting the removal of the unit as a whole;
- d) Disassemble The word "disassemble" means that the Contractor must provide all labour to take apart, piece by piece, the equipment, machinery or system to be examined or repaired;
- e) Examine The word "examine" means that the Contractor must provide labour for the process of systematically examining, checking and testing equipment, records or administrative procedures to detect actual or potential defects or errors;
- f) Install The word "install" means that the Contractor must connect mechanically and electrically and provide the labour and materiel to complete the installation;
- g) New The term "new" means manufactured recently (less than 3 years). The Contractor must provide the TA with proof of recent manufacture of the equipment or materials if requested. Canada will not accept equipment refurbished, reworked or rebuilt.
- h) Or equivalent The term "or equivalent" means a substitute which has equal characteristics i.e. (size, materiel type, life, weight, input, and output) as approved by the TA. A comparison of the general specifications must be provided to the TA for the equipment specified and the "or equivalent" (i.e. old compared to the new);
- i) Overhaul The term "overhaul" as applied to any mechanical equipment, structure or system comprises: disassembly into component parts; cleaning examination of parts for defects; gauging of parts for wear; reporting of parts worn

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

- j) Reassemble The word "reassemble" means that the Contractor must provide all labour and material to put together, piece by piece, the equipment, machinery or system on completion of examination or repair;
- k) Reinstall The word "reinstall" means a piece of equipment that the Contractor has effected repairs on and is to be returned/installed in its original location and be mechanically and electrically connected. The Contractor must provide the labour and materiel to complete the reinstallation;
- l) Remove The word "remove" means that the Contractor must provide all labour and materiel to remove the unit, equipment, materiel, or system in its entirety. Part of the removal process is to blank openings, restore insulation and paint;
- m) Set-to-work The words "set-to-work" means the tuning, alignment and adjustment of equipment/systems required subsequent to satisfactory installation. Inspection to make the equipment/systems ready for technical acceptance trials;
- n) Test The word "test" means that the Contractor must provide labour to conduct the operation of a unit in relation to a stated standard or procedure;
- o) Trials The word "trials" is an element of QA that means an action(s) by which the Contractor proves by a visual or instrumental presentation that the equipment or system satisfies the requirements of the specified trials agenda; and the term "functional test" means operation of a piece of equipment in all its normal operating modes and throughout its operating range to establish that it will perform its designed function within normal operating parameters as indicated in the manufacturer's documentation.

G 1.5 Miscellaneous Provisions

G 1.5.1 Occupational Health and Safety

- G 1.5.1.1 The Contractor and all sub-contractors must follow Occupational Health and Safety (OHS) procedures in accordance with applicable federal and provincial OHS regulations ensuring that Contractor activities are carried out in a safe manner and do not endanger the safety of any personnel.

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G 1.5.1.2 When the Contractor works on the vessel while in the Care and Custody of the Canadian Coast Guard, the Fleet Safety and Security Manual, DFO/5737 must be followed:

- a) Contractor and all its representatives must attend an orientation session on vessel safety before beginning any work to familiarize the Contractor's employees with the dangers specific to the vessel and with its permit systems for work protocols as well as with the procedures for safety, risk prevention, hazard response and pre-work safety assessments. The Contractor will have access to an uncontrolled copy of the Fleet Safety and Security Manual.
- b) The Contractor must comply with the Fleet Safety and Security Manual, DFO/5737, as well as with the instructions for working on board the vessel, in addition to the relevant requirements of the Canada Labour Code during performance of the following types of work:
 - i) Work at heights (working aloft);
 - ii) Entry into enclosed spaces;
 - iii) Degassing (gas free) before entering into confined spaces and for hot work;
 - iv) Lockout and Tagout;
 - v) Electrical work on energized circuits;
 - vi) Hot Work;
 - vii) Pre-work safety assessments (PJSA).
- c) For the purpose of the Lockout and identification procedure, the Contractor must provide the padlocks and locking devices for the Contractor's employees in addition to those provided by the Chief Engineer for the vessel's crew.
- d) The Contractor must adhere to applicable regulations and safety procedures.

G 1.5.1.3 The Contractor must identify a specified person that is responsible for the safety management of the work site. The Safety Manager must insure that daily safety rounds are carried out and that safety issues are identified and safety precautions are maintained.

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- G 1.5.1.4 Areas that pose a hazard as a result of the specification work are to be secured and clearly identified by the Contractor with signage to advise and protect all personnel from the hazard in accordance with applicable regulations.
- G 1.5.2 **Lead Paint and Paint Coatings**
- G 1.5.2.1 The Contractor must not use lead based paints.
- G 1.5.2.2 CCG ships have been painted with lead based paints in the past and as a result some of the Contractor's processes such as grinding, welding and burning may release this lead from the coatings. Canadian Coast Guard will provide copies of all available lead testing results.
- G 1.5.3 **Touch-up / Disturbed Paint**
- G 1.5.3.1 The Contractor, at a minimum, must repair coating systems disturbed as a result of the specified work. Coating systems must be in accordance with the coating system of the vessel, and be applied in accordance with the paint manufacturer's recommended procedures.
- G 1.5.4 **Asbestos Containing Materials (ACM)**
- G 1.5.4.1 The Contractor must use insulation that contains 0% ACM.
- G 1.5.4.2 The Contractor will be supplied with the most recent Asbestos Risk Assessment Report by CCG.
- G 1.5.4.3 Handling of any asbestos containing materials must be performed by trained personnel and/or a company certified in the removal of asbestos in accordance with Federal, Provincial/Territorial and Municipal regulations.
- G 1.5.4.4 The Contractor must provide the TA with disposal certificates for all asbestos containing material removed from the vessel indicating that the disposal was in accordance with Federal, Provincial and Municipal regulations in effect.
- G 1.5.4.5 The Contractor must provide an "Observation Report (OR)" with reference to any concerns or intentions in regard to asbestos containing materials not already specified. The Contractor is to identify any materials that are suspected to contain asbestos prior to any work being completed. Any approved work resulting from the OR will follow the Additional Work Procedures.

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G 1.5.5 Confined Spaces

G 1.5.5.1 Entry into any confined space onboard the vessel during the contract period must be conducted in accordance with the Fleet Safety Manual as determined in the Pre-Work Meeting. In addition to those requirements, the Contractor must also conduct the following:

- a) Have a qualified person issues a “Gas Free Certificate” for spaces that will be entered and post the certificate outside the entrance to the space. Certificates must specify, "Safe for persons" or "safe for hot work" as appropriate.
- b) Provide copies of all certificates generated to the TA in accordance with the Documentation section of the General Notes.

G 1.5.6 Hot Work

G 1.5.6.1 All hot work conducted during the contract must be in accordance with the FSM. In addition to the requirements of the FSM the Contractor must as a minimum also:

- a) Certify confined spaces affected by hot work as “safe for hot work” in accordance with the Confined Spaces section of the General Notes.
- b) Remove all portable combustible materials from the vicinity, to a safe distance not less than two meters away;
- c) Supply and install protective material to prevent the spread of sparks, protect electrical cables and other services;
- d) Supply and post fire sentries in each space and in the adjacent space where welding, grinding, or burning is being carried out on bulkheads, deckheads or decks;
- e) Supply and provide appropriate fire extinguisher(s) to the fire sentries and ensure each sentry is trained in the extinguisher’s use. The fire sentry must maintain a watch in his designated area for a minimum of thirty (30) minutes after any hot work has been completed. The Contractor must record the sentry attendance time on all hot work permits indicating when hot work stopped, and time sentry left post;
- f) Provide a copy of the site generated hot work permits to the TA in accordance with the Documentation section of the General Notes; Named in accordance with the specification item generating the required work.

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G 1.5.7 Work Aloft

G 1.5.7.1 Any work aloft onboard the vessel during the maintenance/refit period must be conducted in accordance with the FSM. Notices must be placed to prevent operation of Radars while personnel are working aloft on the mast or on the wheelhouse top.

G 1.5.8 Electrical Equipment

G 1.5.8.1 When working on electrically operated equipment, the Contractor must lock-out equipment in accordance with the FSM, and as a minimum conduct the following:

- a) Isolate the main power source and any alternative power source to the equipment;
- b) Install Electrical lock-outs and place electrical caution tags on the main power source and any alternate power sources for the switches/disconnects supplying the equipment under maintenance;
- c) Verify at the terminals to ensure power is not present.
- d) Ensure the lock-outs and electrical caution tags remain in place until completion of all work.

G 1.5.8.2 The TA must be notified of all such ongoing work.

G 1.5.9 Workplace Hazardous Materials Information System (WHIMS)

G 1.5.9.1 The Contractor must provide the TA with Material Safety Data Sheets (MSDS) for all Contractor and sub-contractor supplied WHIMS controlled products. MSDS sheets are to be the formats requested in the Documentation section of the General Notes.

G 1.5.9.2 All MSDS sheets must be maintained in accordance with OHS procedures.

G 1.5.9.3 The TA will provide the Contractor with access to MSDS sheets for all controlled products on the ship for all specified work items on request.

G 1.5.10 Smoking in the Work Space

G 1.5.10.1 The Contractor must ensure compliance with the Non-Smokers' Health Act. The Contractor must ensure that there is absolutely no smoking onboard the vessel by their employees, sub-contractors, including the employees of any sub-contractor.

G 1.5.11 Contractor Furnished/Supplied Materials (CFM/CSM) and Tools

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- G 1.5.11.1 The Contractor must ensure replacement material such as jointing, packing, insulation, small hardware, oils, lubricants, cleaning solvents, preservatives, paints, coatings etc. are in accordance with the equipment manufacturer's drawings, manuals and/or instructions.
- G 1.5.11.2 Where no particular item is specified or where substitution must be made, the Contractor must submit an Observation Report indicating the substitution or item not specified to the TA. The Contractor must provide information about materials used, certificate of grade and quality of various materials to the TA prior to use.
- G 1.5.11.3 The Contractor must provide all equipment, devices, tools and machinery such as crane, staging, scaffolding, hoarding, and rigging necessary for the completion of the work in this specification.
- G 1.5.11.4 The Contractor must deliver and store all new CFM equipment at their facility until the start of the work period. The Contractor must transport all new CFM equipment to the work location of the Contract for the beginning of the work period. The Contractor must store on site, in a temporary Contractor supplied storage facility located in the vicinity of the vessel, all new CFM equipment. The CFM must be stored in a secure, environmentally controlled space in accordance with the equipment storage section of this specification.
- G 1.5.11.5 All tools are Contractor supplied unless otherwise stated in the technical specifications.
- G 1.5.12 **Government Supplied Materials (GSM) & Tools**
- G 1.5.12.1 Where tools are supplied by the TA they must be returned by the Contractor in the same condition as when they were borrowed. Borrowed tools must be inventoried and signed for by the Contractor on receipt and return to the TA.
- G 1.5.13 **Storage**
- G 1.5.13.1 Equipment (i.e. covers, cowling and other items that may need to be removed and stored) must be stored in accordance with the equipment manufacturer's or equipment vendor's specific storage instructions. The Contractor must make these instructions available to the TA.
- G 1.5.13.2 All equipment and items must be stored in such a manner so as to be easily accessible for inspection. No items are to be stored directly on floors.

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G 1.5.14 Regulatory Inspections and/or Class Surveys

- G 1.5.14.1 The Contractor must contact, coordinate, schedule, and be completely prepared for all regulatory inspections and surveys by the applicable authority: i.e. Bureau Veritas, TCMS, HC, Environment Canada or others as indicated by individual specifications.
- G 1.5.14.2 Documentation generated by the above inspections and/or surveys indicating that the inspections and/or surveys were conducted (i.e. original signed and dated certificates) must be provided to the TA in accordance with the Documentation Section of these General Notes.
- G 1.5.14.3 The Contractor must not substitute inspection by the TA for the required regulatory inspections.
- G 1.5.14.4 The Contractor must provide timely advance notification (minimum of 2 working days) of scheduled regulatory inspections to the TA so they may witness the inspection.
- G 1.5.14.5 Fees associated with TCMS, HC, Environment Canada, or any other Inspection required by the specification will be invoiced directly to CCG unless otherwise indicated in a specific specification item.

G 1.5.15 Contractor Inspections

- G 1.5.15.1 The Contractor must afford the opportunity for the TA to conduct an inspection with the contractor on the condition and location of items to be removed prior to either carrying out the specified work or gaining access to a location to carry out the work.
- G 1.5.15.2 Prior to the application of a water pressure test to any section of the system the contractor must advise the TA or designate that the applicable sections are ready for inspection. Pressure testing is not to take place without prior inspection of the system and authority to proceed from the TA or designate. Contractor is to demonstrate the integrity of replaced potable water piping via pressure testing to system working pressure. Contractor is responsible to supply and configure all required pressure test equipment to carry out and demonstrate the test. Contractor is also responsible for system drainage and corresponding water collection and disposal, removal of test equipment and system reconnection following testing. Testing is to be carried out on a section by section or deck by deck basis as determined by the TA or designate. Contractor shall arrange for the TA or designate

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to witness and sign off satisfactory completion of each pressure test. Although work will proceed on a section by section basis, task will conclude with a full system test at working pressure for a minimum of 2 hours. Insulation of new piping shall only proceed following a satisfactory pressure test and prior authority from the TA or designate

- G 1.5.15.3 The Contractor must take pre-work pictures prior to removal of any items. These photographs are to be in accordance with the Documentation section of the General Notes, named according to the specification section that prompted removal of those items.
- G 1.5.15.4 Prior to the close out of any item under this specification, the Contractor must afford the TA the opportunity to verify the work has been completed in accordance with the specification. At that time the Contractor must have available all photographs, documents, reports, and trials in relation to the item being closed out as completed.
- G 1.5.16 **Recording of Work in Progress**
- G 1.5.16.1 The TA may record any work in progress using various means including, but not limited to, photography and video, digital or film.
- G 1.5.17 **Access for Maintenance, Installation, and Removal.**
- G 1.5.17.1 The Contractor must determine best routes for installing and removing equipment and include in their bid the requirements for all removal and reinstatement of all interference items to complete the applicable statement of work. All lifting points currently fitted on the ship must be considered uncertified and must be certified before use by the Contractor. The contractor shall be responsible for including in their bid all costs associated with lifting point load testing and certification required to complete work.
- G 1.5.17.2 After equipment installation and/or removal the Contractor must make good all equipment relocations, blemishes, and penetrations and must return the ship to the As-Delivered working condition.
- G 1.5.18 **Assembly of Components**
- G 1.5.18.1 The Contractor must ensure that during installation of specified equipment, that parts and assembled equipment are cleaned of smudges, spatter or excess solder, weld metal and metal chips or any other foreign material which might detract from the intended operation, function, or appearance of the equipment. (This would

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include any particles that could loosen or become dislodged during the normal expected life of the equipment). All corrosive material must be removed. This cleaning must take place before the parts are assembled into the equipment.

G 1.5.18.2 Covers, cowlings and components damaged by the Contractor must be replaced with a new CFM cover, cowling, or component.

G 1.5.18.3 Where torque specifications are not provided by the manufacturer, the applicable SAE, ANSI, or BS1083 nut and bolt standard torque must be used.

G 1.5.19 **Protection of Equipment**

G 1.5.19.1 The Contractor is to supply and install a protective material on the internal decks to avoid damages that may be caused by dropped objects during the work scope. The contractor is to supply and install 1/8-inch masonite sheeting on all interior decks in the superstructure where the work is to take place. Overhead soldering and parts, tool droppage could damage flooring. This material is to be contractor supplied installed (cut to fit a and securely taped down) and removed and disposed of following completion of work. Contractor to provide 1/8 inch masonite sheeting covering 2000 square feet and any additional requirement through PSPC 1379 action.

G 1.5.19.2 All electrical and electronic equipment and components must be protected during the contract against physical damage, internal damage, and by the effects of adverse temperatures or other environmental conditions.

G 1.5.19.3 The Contractor must protect equipment that could be damaged as a result of movement of materials and equipment nearby. The Contractor must also protect equipment from nearby sources of contamination including but not limited to burning, welding, media (sand) blasting, grinding and painting.

G 1.5.19.4 Any damage to surfaces, equipment, furnishings or decor incurred prior to acceptance must be returned to As-Delivered condition by the Contractor.

G 1.5.19.5 All openings in machinery and/or systems prior to connections being made must be kept covered by fitted secure solid inserts or covers at all times.

G 1.5.19.6 The Contractor must obtain and follow instructions from its sub-Contractors for any special protection required for their equipment during the project work. Such instructions must be made available to the TA.

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- G 1.5.19.7 Physical protection including but not limited to plastic sheets, fireproof covers, heavy weight material covers, wood plugs, wood encasements and heaters must be used as required. Contractor is responsible to identify, supply, deploy and remove following work all necessary protective materials required.
- G 1.5.20 **Halocarbon containing Systems**
- G 1.5.20.1 All work conducted on Halocarbon containing systems, must be in accordance with the Federal Halocarbon Regulations, 2003 (SOR/2003-289).
- G 1.5.21 **Welding**
- G 1.5.21.1 In addition to section 7.16 Welding Certification – Contract; All welding and weld inspection must be in accordance with the CCG Welding Specification CT-043-eg-eg-001. This document will be provided to the Contractor within 48 hours of written request to the TA.
- G 1.5.21.2 The governing standards for welding of materials less than 3 mm in thickness must be in accordance with the requirements of the CCG Welding Specification CT-043-eg-eg-001. For materials greater than 3 mm in thickness, the Contractor must meet the following:
- a) For structural steels greater than 3 mm in thickness, welding must meet the requirements of CSA Standards W47.1 and W59, except as modified by the CCG Welding Specification CT-043-eg-eg-001.
 - b) For structural aluminum greater than 3 mm in thickness, welding must meet the requirements of CSA Standards W47.2 and W59.2, except as modified by the CCG Welding Specification CT-043-eg-eg-001.
 - c) For structural stainless steels greater than 3mm in thickness, welding must meet the requirements of CSA Standard W47.1 and AWS D1.6, and of the CCG Welding Specification CT-043-eg-eg-001

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G 1.6 Documentation

G 1.6.1 Text Documentation

G 1.6.1.1 All text deliverables must be accompanied by a PDF file that must contain the complete document. The Contractor must check the quality to verify that the content reflects the same content/formatting as the Master Document file. In the case of changes, a second PDF file that contains only the changed sheets must be supplied.

G 1.6.2 Data Book

G 1.6.2.1 The Contractor must provide all documentation generated as a result of specified deliverables, in both electronic and paper formats. There must be 2 paper copies of each document, in two separate binders, as part of the contractors QA program. An electronic copy of all documentation must also be provided to the TA in accordance with the formats described in this specification section.

G 1.6.2.2 All copies of documents generated as a result of specified deliverables will be referred to as the “Data Book”.

G 1.6.2.3 The Contractor must provide to the TA all the files generated as part of the Data Book prior to the contract being considered complete. The files must be in hard format (Flash Drive / Memory Stick). Each specification item is to have its own folder named according to the specification item. For example “G1.0 General Notes”.

G 1.6.2.4 Any documentation, media, and reports that are the result of Additional Work must be included as part of the Data Book.

G 1.6.3 File Naming

G 1.6.3.1 File naming must include the Contract number and the specification they are relevant to.

G 1.6.4 E-mails

G 1.6.4.1 Any files sent to the CA/TA by e-mail must be named as per the “File Naming” section of this specification. All files that are e-mailed must have the Contract number in the subject name

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G 1.6.5 File Formatting

G 1.6.5.1 All documentation, reports, test results, certificates, or data obtained by the contractor in paper form must be scanned into unprotected, searchable, Adobe PDF formatted files and named according to the File Naming section of this specification.

G 1.6.5.2 All reports, test results, certificates, or raw data obtained by the contractor in electronic format must be converted to unprotected Adobe PDF formatted files and named according to the “File Naming” section of this specification. Both the original and the converted copy must be provided as part of the Data Book.

G 1.6.6 Photographs

G 1.6.6.1 All photographs obtained by the contractor as requested in the specification must be provided in .JPG formatted files at a resolution of at least 640 x 480 and named according to the “File Naming” section of this specification.

G 1.6.7 Measurements, Calibrations, and Readings.

G 1.6.7.1 All measurements, calibrations and readings recorded, must be signed by the person taking the measurements, dated and scanned into electronic format as part of the Data Book.

G 1.6.7.2 Unless otherwise specified the Contractor must record dimensions to a precision of three significant digits in imperial along with the metric equivalent.

G 1.6.7.3 The Contractor must provide to the TA current and valid calibration certificates, and control values for all instrumentation used in the Test and Trials Plan, showing that the instruments have been calibrated in accordance with the manufacturer’s instructions. These copies are to be provided as part of the Data Book, under any specification where measurements are required.

G 1.6.8 Test/Inspection Records and Certificates

G 1.6.8.1 Test and/or Inspection Records and Certificates are identified as a deliverable in the individual specification item requesting them.

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- G 1.6.8.2 Test and/or Inspection Records and Certificates, must be included as a separate section in the Databook and indexed/arranged in numeric order by specification number.
- G 1.6.8.3 The Contractor is responsible for maintaining a complete and accurate record of all tests and trials conducted on the vessel and on each piece of equipment. Prior to the commencement of a trial, all relevant documentation and associated test sheets, including shop test data, must be complete and attached to the trials agenda.
- G 1.6.8.4 All tests and trials data must be legible both in hard copy and electronic format. If necessary, handwritten records may require transcription into electronic format in order to be acceptable. The original must be signed by the regulatory body, the TA, the Contractor and, where necessary, by the sub-Contractors and/or FSR's who witnessed the tests. All the data must be submitted to the TA in accordance with the Documentation section of these General Notes.
- G 1.6.8.5 The Contractor must, in addition, provide originals of each certificate document to the TA in an envelope marked with the vessel's name and the works "Original Certificates"

G 1.7 Drawings

- G 1.7.1 This section is to be referred to as the Drawing Section of the General Notes, is intended to be used as reference for the minimum standards when specified deliverables are drawings.
- G 1.7.2 The Contractor must use ASME Y14.100 for guidance for drawing deliverables.
- G 1.7.3 The Contractor must have on staff or provide through a subcontractor a person qualified and experienced in the use of AutoCad who will create or modify drawings that result from the work.
- G 1.7.4 The Contractor must comply with the Canadian Coast Guard National CAD Standards titled "CT-014-000-ES-TD-001 Computer Aided Design (CAD) using AUTOCAD" provided. Also provided is a compressed file including the CAD templates required to meet the CCG standard.
- G 1.7.5 Drawing recording media (thumb drive) must be clearly labeled with the Contract Number, file names and drawing numbers. If a complete listing exceeds the label size/space, a "readme.txt" file in ASCII format must be provided with each drive. A printed copy of the Readme file must accompany each drive. Drives must be

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labeled As-Fitted drawings for those drawings that have been approved and finalized.

- G 1.7.6 Final As-Fitted prints/plots must not contain markings or corrections by hand (i.e. marker, pen, pencil, etc.). Drawings containing mark-ups must be revised and re-printed/plotted.
- G 1.7.7 The Contractor must prepare all the working drawings necessary to complete specified work.
- G 1.7.8 The Contractor must furnish all drawings required by sub-Contractors, trades and other consultants.
- G 1.7.9 The Contractor must have in place a complete system of documenting and controlling all drawing revisions affected by the work. Drawing numbering system and titles must match the original drawings for clarity and include a revision number with date.
- G 1.7.10 **Guidance Drawings – Set Number**
- G 1.7.10.1 All technical guidance drawings are issued to the Contractor for guidance purposes only. The Contractor must develop working drawings and to ensure that all such drawings receive applicable regulatory approval. Not all technical guidance drawings supplied are As-Fitted drawings; therefore the Contractor must physically verify affected items.
- G 1.7.10.2 The Contractor must communicate to the TA all departures from the provided guidance drawings and project specifications and obtain written acceptance from the TA before carrying out such alterations or departures.
- G 1.7.11 **As Fitted Drawings**
- G 1.7.11.1 The As-Fitted Drawings are identified as a deliverable in the specification item requesting them.
- G 1.7.11.2 Upon completion of specified work, the Contractor must transfer the mark-ups from any working drawings where installation changes were made to drawings affected by the work; these drawings become the As-Fitted drawings.
- G 1.7.11.3 The As-Fitted Drawings must be in accordance with the Canadian Coast Guard National CAD Standards titled “CT-014-000-ES-TD-001 Computer Aided Design (CAD) using AUTOCAD” provided.

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- G 1.7.11.4 The Contractor must provide As-Fitted Drawings to the TA prior to completion of the Contract. The drawings must be submitted in the following formats:
- a) 2 Plotted Copies of the latest revision of each of the As-Fitted Drawings.
 - b) 1 Electronic Copy of the latest revision of each of the As-Fitted Drawings.
- G 1.7.11.5 Plotted drawings must be on standard ANSI paper sizes.
- G 1.7.11.6 "Marked up drawings are to be AutoCAD drawings where original AutoCAD drawings are provided. If no AutoCAD drawings were provided then scanned files (raster format) must be supplied to CCG in one of the following formats:
- a) DXF format;
 - b) TIFF format.

G 1.8 Manuals

- G 1.8.1 This section, to be referred to as the Manuals section of the General Notes, is intended to be used as reference for the minimum standards when specified deliverables are to be manuals.
- G 1.8.2 The Contractor will be provided access to the vessel's manuals. If a manual provided is the vessel's physical copy, the Contractor must make a copy for themselves and return the original to the TA.
- G 1.8.3 **General – Set Number**
- G 1.8.3.1 Instruction Manuals must be individually bound in a hard cover 3 ring book format with a page size of 8 1/2" x 11". Drawings of a larger size must be concertina folded to suit. The covers must have the following information printed thereon:
- a) "Vessel Name
 - b) Equipment ID
 - c) Equipment Manufacturer
 - d) Date"
- G 1.8.3.2 Plastic tabbed indices must be provided for all sections of the manuals. Major equipment components must be subdivided into separate sections of the manuals.

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- G 1.8.3.3 A master index must be provided at the beginning of each binder indicating all items included in each section.
- G 1.8.3.4 A list of names, addresses and telephone numbers of contacts associated with the equipment manufacturers must be provided that can be used after the project completion for maintenance and information data purposes.
- G 1.8.3.5 A copy of the final reviewed and approved As-Fitted drawing(s) must be provided within the maintenance manual.
- G 1.8.3.6 One (1) electronic copy of each manual must be provided in accordance with the Data Book section of this specification.
- G 1.8.3.7 Two (2) paper copies of manuals and data sheets must be supplied in English for all Contractor Furnished Equipment items.
- G 1.8.4 **Operation Manuals – As-Fitted**
- G 1.8.4.1 Operation manuals must include the following items:
- a) General description of equipment operating sequence;
 - b) Step by step procedures to follow in commissioning the equipment;
 - c) Schematic wiring diagram for the fitted equipment; and
 - d) All pertinent equipment performance criteria.
- G 1.8.5 **Maintenance Manuals – As-Fitted**
- G 1.8.5.1 Maintenance manuals must include:
- a) Manufacturer's maintenance instructions for each item of the equipment requiring maintenance activity;
 - b) Instructions are to include installation instructions, part numbers, part lists, master drawings and exploded views with part identification for all mechanical, electrical and electronic parts, name of suppliers;
 - c) Summary list of each item of the equipment requiring lubrication, indicating the name of the equipment item, location of all points of lubrication, type of lubricant recommended, and frequency of lubrication; and

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- d) Troubleshooting sections must be included for all equipment in the maintenance manual under a separate heading.

G 1.9 Identification

G 1.9.1 Nameplates

G 1.9.1.1 Nameplates are identified as a deliverable in the individual specification item requesting them.

G 1.9.1.2 All nameplates must be in English, except where required in English and French by TCMS for reasons of emergency operation.

G 1.9.1.3 Lettering must be clear and concise with the minimum use of abbreviations. Primary information must be given in larger size lettering than secondary information.

G 1.9.1.4 The type of nameplates must suit the location in the vessel as specified below:

- a) Plastic:
 - i) Laminated plastic nameplates, black with white core engraved through to the center core, must be provided for all devices located on the exterior surfaces of switchboards, MCC's, or local control panels. Nameplates must be secured to the equipment with machine screws.
 - ii) New nameplates to be fitted on the existing equipment must be consistent in size and lettering with those already fitted or those being replaced.
 - iii) Nameplates indicating feeder circuits must identify each circuit by name and number and the fuse size or trip element rating.
 - iv) The Following Labels must be of laminated plastic, red with white core engraved through to the center core:
 - v) Safe Working Loads,
 - vi) Warning/Caution labels,
 - vii) Circuit Breakers with shunt trips requiring completion of remote circuits prior to being operated,
 - viii) Equipment with multiple power sources,

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- ix) Circuit breaks having a potential power source connected to both sides
- x) Indication of any other potentially hazardous condition.
- b) Engraved on Metal:
 - i) Must be used in machinery spaces and where exposed to the weather or susceptible to covering by paint, oil or grease. Nameplates exposed to weather must be stainless steel or brass. Engraved metal nameplates must be of stainless steel or brass with lettering accentuated by means of black wax unless otherwise noted, and secured with stainless steel or brass machine screws.
 - ii) A complete list of nameplates, detailing size of plate, size of lettering and inscription must be submitted to the TA for review prior to ordering and/or manufacturing.

G 1.9.2 **Wire Labelling**

- G 1.9.2.1 Wire Labelling is identified as a deliverable in the individual specification item requesting them.
- G 1.9.2.2 All permanently installed cables must be tagged with the circuit designation at all points of connection and on both sides of bulkheads, decks, etc. Tags must be of metal compatible with the armor or cable sheathing. Both ends of the tags must be strapped to the cable with compatible metal strap after all painting has been completed. Straps must pass through holes in the tags so that tags are positively secured. Strap ends must be permanently folded and crimped. Adhesives of any kind will not be acceptable.
- G 1.9.2.3 All wiring in panels specified to be labelled must be labelled with the Cable Number and their conductor # unless otherwise specified in equipment installation drawings.

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S 1.0 SERVICES

S 1.1 GENERAL

S 1.1.1 The Contractor must note that the vessel is mostly wired 240 V 60 HZ, supplied through European 2-prong receptacles. Contractor is responsible to supply their own 120 V 60 HZ supply for operating their equipment. The contractor is to include in their bid all costs associated with the supply and running/maintenance costs associated with this requirement.

S 1.1.2 All staging, crange, screens, lighting, and any other support service, equipment, and material necessary to carry out the work identified in these specifications must be Contractor supplied, installed and removed following completion of work.

S 1.1.3 The Contractor and Contractor's employees will not have access to the vessel's washrooms and crew mess facilities. The Contractor must provide the necessary amenities as required.

S 1.2 WORKSITE INSPECTIONS

S 1.2.1 Before the Contractor starts any work on the vessel the Contractor's Quality Assurance Representative and the TA must walk through each space and area where work is to take place, including access and removal routes and areas adjacent to those where the work is to be done as a result of this specification. The Walk-through must occur during vessel demobilization and the Contractor's Quality Assurance Representative must identify all items that are to be removed/secured.

S 1.2.2 The Contractor's Quality Assurance Representative must take digital pictures of each area showing the outfit therein. Each picture must be dated and named as to the location on the vessel and that it represents As-Delivered conditions. These photos must be in the format; as well as named, in accordance with the Documentation section of the General Notes. A Copy of these photos must be provided to the TA within 48 hours of the start of contract on a memory stick.

S 1.2.3 During the work period, the Contractor must maintain work areas in the vessel, in a clean condition, free from debris and remove garbage daily. The Contractor is responsible for storage in a suitable Contractor supplied garbage container and disposal of all debris and garbage related to this contract.

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- S 1.2.4** Upon completion of the contract, the Contractor must ensure that all waste generated from the work of this SOW is disposed of and must return the vessel to the As-Delivered state of cleanliness.
- S 1.2.5** Prior to the completion of the Acceptance Document, the Contractor's QA Representative and the TA must perform an inspection of the vessel to view all areas where work was performed by the Contractor. Any deficiencies or damage noted must be recorded and compared to the photos and if deemed to have been caused by the Contractor as a result of the work the damage must be repaired by the Contractor at no cost to and to the satisfaction of the TA.
- S 1.2.6** Copies of all photos, documentation, and inspection sign off sheets must be provided in accordance with the Documentation section of the General Notes.
- S 1.3 FIRE PROTECTION**
- S 1.3.1** The Contractor must ensure protection against fire throughout the contract period.
- S 1.3.2** The Contractor must ensure the isolation, removal, installation and reactivation of the shipboard fire detection and suppression systems or any components thereof, is performed by a qualified technician. When the shipboard fire detection or fire suppression system is deactivated or disabled by the Contractor during the contract period, the system must be recertified by a qualified technician prior to the end of the work period, as fully functional. A signed and dated original copy of the certificate must be delivered according to the Documentation section of the General Notes.
- S 1.3.3** The Contractor must note that failure to take the necessary precautions while performing work on the vessel's fire suppression system(s) could result in the accidental discharge of the fire suppression agent(s). The Contractor will be responsible for recharge and recertification at his cost, container(s) or systems that are discharged as a result of the contractor's or subcontractor's activities.
- S 1.3.4** The ships portable fire extinguishers are only to be used in the event of an emergency and not for any hot work tools. Any and all that are so used must be Contractor refilled and recertified by an authorized fire equipment service company that has marine experience.
- S 1.3.5** The vessel is equipped with fixed firefighting systems in the listed spaces below. In the event that the Contractor wishes to isolate, deactivate, or temporarily remove any part of the system, the work must be performed by a qualified technician from an authorized fire equipment service company that has marine experience. Any system worked on must be reactivated by the qualified

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technician. A signed and dated original copy of the certificate must be delivered according to the Documentation section of the General Notes. All spaces must be fully operational prior to resumption of custody by CCG.

S 1.3.6 List of locations protected with a fixed fire system

System	Location	Type	Capacity
Refer to Fire and Safety Plan			

S 1.3.7 The vessel is fitted with ELTEK Honeywell Fire Detection System and detector heads throughout the vessel. In the event that any system component is disturbed by the Contractor to facilitate contract work, the Contractor must:

- b) Recertify the system using a technician certified to work on systems from this manufacturer.
- c) Provide a copy of the Technician's certificate in accordance with the Documentation section of the General Notes.
- d) Provide a copy of the system's recertification in accordance with the Documentation section of the General Notes.

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GR 01 GENERAL REQUIREMENTS

1.1.B **GR 01 Weight Management**

- 1.1.B.1 The intent of this requirement is to have the Contractor to be responsible for providing an accurate and strict Weight Control Program during the course of this contract.

- 1.1.B.2 All equipment, components, and steel removed must be weighed and its location noted. The replacement equipment and materials used must also be weighed and relocated as close to the same position as the equipment being replaced. A record must be maintained of the weights removed, the weights of the replacement equipment and the differences in weight for each component.

- 1.1.B.3 The weights of the components removed and/or installed as per the work specified in items 2, 4, 6, and 11 must be recorded.

- 1.1.B.4 Weight may be obtained either from suppliers, by calculation from working drawings, by weighing items, or by a combination of the above. The weight of piping, insulation, structural components etc., may be calculated. These items must be weighed on a selective or sampling basis, as determined by the Contractor, to establish the accuracy of calculated weights.

- 1.1.B.5 Calibrated and certified scales must be used for weighing items. Copies of the scales calibration certificate(s) are to be provided to the CCG TA.

- 1.1.B.6 The Contractor must measure and record the location of each piece of equipment removed and replaced in comparison to a vertical and horizontal baseline reference point.

- 1.1.B.7 Three (3) hard copies and one electronic copy (PDF) of the final “as-delivered” Weight Control report must be submitted to the CCG TA at the end of the Contract.

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2.0 Potable Hot & Cold Water Piping Replacement

2.1.A Identification

2.1.A.1 The objective of the specification is to replace all piping for both the hot and cold potable water systems throughout the Main Deck, Bridge Deck and Forecastle Deck. The materials to complete this work scope will be contractor supplied materials. Contractor supplied materials will be compensated upon supply of applicable invoices through PSPC 1379 action. Contractor will be responsible to ensure all supplied materials are free of internal debris or other foreign materials prior to installation.

2.1.B Drawing- DWG# 740-581-010 FRESH WATER-SYSTEM DIAGRAM MANGYSTAU-2 MAIN DECK POTABLE WATER PIPING- As Fitted Dimensions

2.1.C Regulations and standards

The applicable Acts, Regulations, Rules, Codes and Standards for this specification are contained in Annex A ‘Acts, Regulations and Rules Applicable to CCGS Mangystau-2’ attached. Additional Standards and Codes that are applicable for individual specification items are listed in Annex –B. Both Annexes will be provided in a separate document. The following Standards and Regulations in particular but not limited to apply;

	Title	Included Yes/No
Regulations	Maritime Occupational Health and Safety Regulations	No
	Vessel Fire Safety Regulations	No
	SOLAS, II-1 & II-2	No
Rules	BV Rules for Classification of Steel Ships Updated January 2022 (NR467)	No
	BV Rules on materials and welding for the classification of marine units (NR216)	No
Standards		
ASTM B88,	Seamless Copper Tubes - Dimensions	No
ASTM F 1155	Standard Practice for Selection and Application of Piping System Materials	No

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2.1.D Scope of work

- 2.1.D.1 The Contractor shall isolate the main deck system supply at hot water valves 581V054, 581V057, and cold-water valves 581V055 and 581V058 (Fresh Water Dwg # 740-581-010). Piping replacement will begin from outlet of these valves and continue throughout the main deck until they terminate at fixtures or loop back to system supply. All fixture isolation valves to be replaced with new like for like valves.

- 2.1.D.2 The Contractor shall isolate the forecastle deck system supply will be isolated at valves 581V060, 581V063 (Cold water) and valves 581V061 and 581V059 (Hot water). Copper piping replacement will be completed from the outlet side of these valves throughout the forecastle deck up to the isolation valves for each modular bathroom unit.

- 2.1.D.3 The contractor shall isolate the bridge deck system supply at valves 581V064 (Cold water), valve 581V065 (Hot water) and valve 581067 (return hot water). Copper piping replacement will be completed from the outlet side of these valves throughout the forecastle deck up to the isolation valves for each modular bathroom unit.

- 2.1.D.4 The Contractor Material requirement is Copper Type K, SMLS ASTM B88 Half Hard / Annealed reference (Fresh Water Dwg # 740-581-010)

- 2.1.D.5 The Contractor shall remove the ceiling panels and stamp them for clarity for re-installation.

- 2.1.D.6 Panels supporting lights, smoke detectors, speakers or any other electrical equipment will only be removed at the discretion of the Chief Engineer

- 2.1.D.7 The Contractor shall remove Insulation and piping in stages to allow like for like replacement.

- 2.1.D.8 Contractor shall be responsible for disposal of all unusable, original material

- 2.1.D.9 Contractor is to provide rigid support from the deckhead either using the original pipe hangers or replacements of the same type and quality spaced at same intervals as original

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- 2.1.D.10 Contractor is to include in their quote supply and replacement of 30 hangers complete for each pipe size and additional hangers shall be addressed through PSPC 1379 action.
- 2.1.D.11 The Cu22 line that supplies the three toilets in the CHANGE ROOM and. Contractor shall supply and install appropriate backflow prevention device such as Watts 719 double check valve assembly, or equivalent. The backflow preventer will be located so free access can be achieved for maintenance.
- 2.1.D.12 The cold water Cu22 line that supplies the three laundry machines and Contractor shall supply and install appropriate backflow prevention device such as Watts 719 double check valve assembly, or equivalent. The backflow preventer will be located so free access can be achieved for maintenance.
- 2.1.D.13 Contractor is to terminate lines extending outboard from the lower recovery area loop towards the thermostatic valves port and star-board with removable end caps.
- 2.1.D.14 Contractor is to supply and install pipes/ fittings and back flow preventers per Annex- D Potable water pipes/fittings and backflow preventers.
- 2.1.D.15 Contractor is to terminate supply for public main deck washroom showers (2) with removable end caps.
- 2.1.D.16 Contractor is to terminate supply for main deck change room showers (4) and sinks adjacent to showers (2) with removable end plugs.
- 2.1.D.17 Contractor to remove supply for main deck Engineers change room showers and install 5inch Cu22 hot and cold supply lines on port side of change area and terminate with brass ball valves for Engineer' washing machine
- 2.1.D.18 Contractor to terminate hot and cold water supply to all Forecastle deck recovery area public washroom fixtures. The hot water circuit will continue to valve V581059.
- 2.1.D.19 The Contractor shall isolate the potable water distribution system for the each level. The contractor must ensure any / all residual pressure is safely released and verified prior to pipe replacement. Contractor shall carry out replacement on a section-by-section progression basis in consultation and coordination with the TA.
- 2.1.D.20 The Contractor shall remove the ceiling panels and mark/map them as to space and position for re-installation in their corresponding original positions. Contractor shall be responsible for safe, protected stowage and any associated transport of all

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removed panels to and from a contractor supplied or other agreed secure storage location until work is complete.

- 2.1.D.21 The Contractor is to remove and dispose of all pipe insulation for access to system pipe work. Pipe removed is to be replaced with like for like materials. Contractor must follow the same pipe routing as the old piping and reuse the original piping brackets/hangars wherever possible. Replacement of broken or corroded brackets/hangars will be Contractor responsibility and will be carried out via PSPC 1379 action.
- 2.1.D.22 Where piping sections are inaccessible and extend behind bulkhead panels to fixtures and connections within the panel. Contractor is to cut the old pipe at a point before and closest to the bulkhead and join the new pipe to the old pipe section running behind the bulkhead.
- 2.1.D.23 The Contractor shall be responsible to remove the old pipe work and fittings. Contractor is to retain all removed copper and brass fittings to a location aboard the vessel as directed by the TA. Contractor shall be responsible to remove and dispose of all other removed materials.
- 2.1.D.24 The contractor shall be required to leak & pressure test the each replaced section before proceeding to isolate the next section. Pressure test will be to system working pressure for 2 hours and is to be witnessed by the TA prior to new piping being placed in service.
- 2.1.D.25 Upon completion of pressure test all potable water pipes and fittings, excluding valve handles and service fittings, will be completely covered with Armaflex AF type or equivalent closed cell rubber foam insulation. Substitution must meet fire rating and approvals of original insulation. All seams completely sealed and taped to maintain complete coverage

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3.0 Air Receiver Cleaning, Inspection & Testing

3.1.A Identification

The objective of this scope this to carry out the inspection, testing and recertification as per manufactures specifications of the two main air receivers. Capacity of each air receiver is 500 liters. See below, lower air receiver bottle name plate.



3.1.B References

3.1.B.1 **Drawings** 740-731-100 Rev. B Compressed Air System Scheme

3.1.C Regulations and standards

3.1.C.1 The applicable Acts, Regulations, Rules, Codes and Standards for this specification are contained in Annex A ‘Acts, Regulations and Rules Applicable to MV Mangystau-2 attached. Additional Standards and Codes that are applicable for individual specification items are listed in Annex –B. Both Annexes will be provided in a separate document. The following Regulations and Standards apply to work carried out in this section in particular:

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	Title	Included Yes/No
Regulations	SOLAS II-1	No
Rules	BV Rules for the Classification of Steel Ships (NR 467), Pt A, Ch 3, sec 3 & Pt C, Ch. 1, sec 3	No
Codes	Harmonized System of Survey and Certification (HSSC)	
Standards		
ASTM F 1155	Standard Practice for Selection and Application of Piping System Materials	No
TP15456E	Annex 1, 5.4	No

3.1.D **Statement of Work**

- 3.1.D.1 TA shall arrange for air receiver drainage and isolation. Contractor shall verify drainage and depressurization in coordination with the TA and apply and maintain all applicable system safety lockouts during the work.
- 3.1.D.2 Contractor shall be responsible to open both receivers and thoroughly clean interior surfaces to prepare them for internal inspection. Contractor is to advise TA once the receivers are ready for inspection.
- 3.1.D.3 Contractor shall remove Air Receiver relief valves for inspection and testing. Relief valve(s) set to 33 bar pressure, certificates to be provided. All gaskets to be replaced with new ones and contractor supplied spacer/adaptors installed between valve block and relief valve on receiver end cap.
- 3.1.D.4 The contractor will supply spacer/adaptors installed between valve block and relief valve on receiver end cap to raise relief valve connection to an appropriate height so the relief valve may be removed with valve block in place. Adaptor must be SS construction and rated to 45 Bar pressure.

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- 3.1.D.5 Both air receiver valve blocks will be fully serviced, all valve sealing surfaces to be renewed with OEM materials, and tested to rated pressure. This service may be completed offsite if necessary. See below photo of lower receiver bottle valve block.



- 3.1.D.6 Contractor shall perform a pressure test (1.1 times the working pressure= 33bar) on complete assembly with all valves in place and in a closed condition. (drain gate valve, inlet gate valve, air outlet gate valve and a plug installed in Relief valve). Contractor is to notify TA on the condition and requirement for any additional service.
- 3.1.D.7 Contractor is to carry out MP NDT test on each air Receiver outlet manifold block, 2 pieces. Contractor is to provide NDT test reports.

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3.1.E Documentation

- 3.1.E.1 Contractor to provide copies of the certificates for air receiver relief valves.
- 3.1.E.2 Contractor to provide copies of NDT and pressure test reports for both air receiver manifold blocks.

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4.0 FiFi And Deluge System Exterior Piping & Component Removals

4.1.A.1 Identification

The objective of this scope is for contractor to remove the exterior Fifi and deluge piping and attached components from the vessel to an approved disposal location.

4.1.B References

4.1.B.1 **Drawings** 740-101-001 FiFi System Diagram

4.1.B.2 Regulations and Standards

The applicable Acts, Regulations, Rules, Codes and Standards for this specification are contained in Annex A ‘Acts, Regulations and Rules Applicable to CCGS Mangystau-2’ attached. Additional Standards and Codes that are applicable for individual specification items are listed in Annex –B. Both Annexes will be provided in a separate document.

4.1.C Scope of Work

4.1.C.1 Contractor is to follow CCG Hot work policy and must provide required personnel for hot work and permits for cut, torch or grind off piping and brackets. Contractor is to provide protections to any windows or adjacent equipment that can be damaged by these processes.

4.1.C.2 Lock-out Tag-out

Prior to commencing any work the Contractor must install /remove locks and tags accordingly during the scope of work. The vessel’s TA will assist the Contractor in identifying the locations to perform the lock outs, but will not perform the actual lock out. The Contractor/FSR must supply and install their own locking devices and retain all keys during the scope of this work. Upon completion of all work the TA must be in attendance when all locks/tags are removed.

4.1.C.3 Contractor shall be responsible to remove all exterior deluge piping and components and FIFI system piping and components as described below. All exterior piping and components are to be removed in their entirety from the outlet ends to the flange nearest the section of piping extending from the vessel interior through the corresponding welded pipe transit. Contractor is responsible to cut off/remove and grind smooth all corresponding component securing brackets. The various pipe sizes are DN300, DN 200, DN 80 and DN50 and associated size

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valves and fittings. Refer to FiFi system diagram. Approximate total pipe lengths are DN 300- 40 feet, DN 80 – 120 feet, DN –50 –60 feet, and DN 250- 60 feet.



- 4.1.C.4 Contractor shall be responsible for the providing the mobile crane suitable to reach above the wheelhouse and facilitate FiFi monitor and FiFi Pipe section removal. Contractor is responsible for transport of removed components to an approved location for proper disposal. Contractor is to provide the disposal certificates to TA.
- 4.1.C.5 Contractor shall be responsible to identify type and number and supply and install blank flanges (including new bolts, nuts washers and gaskets) on the flanged pipe ends closest to sections of piping passing through welded pipe transits to the vessel interior. Contractor to use non compressible gasket material for blanking the pipes.
- 4.1.C.6 Contractor shall remove both fire monitors from the current pedestal support and leave on ship for CG disposal.
- 4.1.C.7 Contractor to remove and disconnect electrical connections for the fire monitors and terminate in contractor supplied junction box.
- 4.1.C.8 Contractor shall supply and install and following completion of work remove all certified scaffolding required to complete this work.
- 4.1.C.9 Contractor must apply 2 coats of marine exterior primer per International paint specification in each location where brackets or other welded components have

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been cut from and ground to bare metal by the contractor during piping and component removals.

- 4.1.C.10 The weight of the components removed and installed associated with this work must be obtained and recorded as per specification item GR.01.

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5.0 HVAC System Cleaning

5.1.A Identification

5.1.B The objective of this specification is to perform complete cleaning of the HVAC ventilation ducts in accommodation space. This work is to be carried out in conjunction/coordination with specification item number 9.0 HVAC Heating Flexible Duct Replacement.

5.1.C References

5.1.C.1 **Drawings -Reference to HVAC manual**

5.1.C.2 **Regulations and Standards –**

The applicable Acts, Regulations, Rules, Codes and Standards for this specification are contained in Annex A ‘Acts, Regulations and Rules Applicable to CCGS Mangystau-2’ attached. Additional Standards and Codes that are applicable for individual specification items are listed in Annex –B. Both Annexes will be provided in a separate document.

5.1.D Scope of Work

5.1.D.1 Lock-out Tag-out

Prior to commencing any work the Contractor must install /remove locks and tags accordingly during the scope of work. The vessel’s TA will assist the Contractor in identifying the locations to perform the lock outs, but will not perform the actual lock out. The Contractor/FSR must supply and install their own locking devices and retain all keys during the scope of this work. Upon completion of all work the TA must be in attendance when all locks/tags are removed.

5.1.D.2 Contractor must take caution for the presence of electrical reheat units and connected wiring located in each HVAC diffuser. Contractor shall be responsible to isolate the HVAC system to perform cleaning of the ventilation ducting in accommodations on all deck levels. Where necessary the contractor shall make additional access openings to access otherwise unreachable sections of ductwork. The size and location of such openings shall be determined in consultation and under the authority of the TA. The contractor shall supply and install removable and full sealing covers and/or plugs to all such new openings as applicable. All work required for additional openings and applicable covers will be managed through 1379 action.

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- 5.1.D.3 Contractor shall perform thorough cleaning and vacuuming of all HVAC ducting and connected diffusers and louvres. Contractor shall be responsible for the supply of all necessary equipment and materials to carry out the work.
- 5.1.D.4 Contractor is to advise the TA upon completion of cleaning. Prior to system close-up and demobilization of cleaning personnel and equipment TA shall inspect the HVAC ducting and air distribution components.
- 5.1.D.5 Contractor shall supply any required certified scaffolding to carry out the work. Contractor shall assemble and install all such scaffolding and following completion of work disassemble and remove it from the vessel.
- 5.1.D.6 Upon satisfactory completion of the work the contractor shall reinstall all removed diffusers.
- 5.1.D.7 Contractor shall be responsible for the collection, removal and disposal of all dirt and waste generated or accumulated during the work. Contractor must ensure that all specific areas accessed during the work are thoroughly clean and returned to “as found condition” upon completion of the work.

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6.0 Potable Water System Modifications And UV Treatment Sterilizer Installation

6.1.A Identification

The objective of this specification to add back flow preventors in the potable water system in accordance with FSM. The UV Sterilizers for potable water system to be replaced with new one and tested for satisfactory operation

6.1.B References

6.1.B.1 **Drawings** - 740-581-010 Rev B Fresh water piping system

6.1.B.2 **Regulations and Standards**

The applicable Acts, Regulations, Rules, Codes and Standards for this specification are contained in Annex A ‘Acts, Regulations and Rules Applicable to CCGS Mangystau-2’ attached. Additional Standards and Codes that are applicable for individual specification items are listed in Annex –B. Both Annexes will be provided in a separate document. The following Regulations and Standards apply in Particular to work carried out in this section.

Document	Title	Included Yes/No
Regulations	Maritime Occupational Health and Safety Regulations, section 73	No
Standards		
Department of Health	Guidelines for Canadian Drinking Water Quality, prepared by the Federal-Provincial-Territorial Committee on Drinking Water and published by the Department of Health.	No
CSA Code B64.10.17	Selection and installation of backflow preventers	No
ASTM F 1155	Standard Practice for Selection and Application of Piping System Materials	No
Fleet Safety Manual	FSM 7.A.12 Potable Water Quality,	Yes

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6.1.C **Scope of Work**

6.1.C.1 Lock-out Tag-out

Prior to commencing any work the Contractor must install /remove locks and tags accordingly during the scope of work. The vessel's TA will assist the Contractor in identifying the locations to perform the lock outs, but will not perform the actual lock out. The Contractor/FSR must supply and install their own locking devices and retain all keys during the scope of this work. Upon completion of all work the TA must be in attendance when all locks/tags are removed.

6.1.C.2 Contractor shall remove existing sterilizer units, procure and install 2 new UV sterilizer units approved for potable water and operate on a 230 V 60 HZ power supply.

6.1.C.3 UV sterilizers should be installed in parallel with isolation valves so each unit can be worked on without affecting the operation of the other unit. The UV sterilizer must have a indication of intensity and have an alarm function that sounds when the UV intensity drops below a set value. UV sterilizer must each be able to handle the system designed flow rate each 3 m³/hr @ 5 bar. Reference Fresh Water Drawing 740-581-010_B.

6.1.C.4 UV Sterilizer must be mounted in such a way to allow removal of the bulbs and quartz tube assembly without obstruction by other equipment or objects.

6.1.C.5 Contractor shall be responsible to procure and install Watts 719 back flow preventer or equivalent unit before 581V012 as per OEM Instructions in the non-potable water line.

6.1.C.6 **Performance requirements**

6.1.C.6.1 Prior to acceptance, the UV sterilizer system shall be verified satisfactorily functional and operational by the CCG TA and Chief Engineer upon completion of work. The Contractor will be responsible for any necessary corrections.

6.1.D **Documentation**

6.1.D.1 The contractor must provide an approval certificate meeting the requirements referenced in subsection 6.1.B.2 specifically the guidelines for Canadian drinking water.

6.1.D.2 The contractor shall provide copies of the manufacturer's product information sheets to the CCG TA as per standards in subsection 6.1.B.2.

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7.0 Public Address System Modifications

7.1.A Identification

7.1.A.1 The objective of this item is to have contractor assess the existing Vingtor Integrated Communications System and make changes necessary to comply with the applicable Regulations as per Annex A. The following Regulations and Standards apply in particular to work carried out in this section:

7.1.B References

7.1.B.1 Equipment Data

7.1.B.1.1 Contractor Supplied Material (CSM)

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

7.1.B.2 Drawings and Documents

The following Drawings are to be considered as Guidance Drawings as defined in the Drawings section of the General Notes.

Drawing Number	DRAWING TITLE
740-425-001_D	Mangystau II – Intercom PA-System Cable Diagram As-Built
740-894-085_D	Mangystau II – Location of Internal Communication Equipment’s GA As-Built
Document Number	DOCUMENT TITLE
N/A	Loudspeakers-microphones.pdf
N/A	Public Address Amplifier System.pdf

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7.1.C Regulations and Standards

The applicable Acts, Regulations, Rules, Codes and Standards for this specification are contained in Annex A ‘Acts, Regulations and Rules Applicable to CCGS Mangystau -2’ attached. The following standards apply in addition to those of Annex A (as also summarized in Annex B ‘Additional Codes and Standards’)

	Title	Supplied by:
Regulation	Vessel Fire Safety Regulations, Section 145 (1)	Contractor
	SOLAS, Chapter II-2/12.3	Contractor
Rules	BV Rules for the Classification of Steel Ships (NR 467)	Contractor
Codes	IMO Resolution A.1021 (26), Code on Alerts and Indicators	Contractor

7.1.D Statement of Work

7.1.D.1 Lock-out Tag-out

Prior to commencing any work the Contractor must install /remove locks and tags accordingly during the scope of work. The vessel’s TA will assist the Contractor in identifying the locations to perform the lock outs, but will not perform the actual lock out. The Contractor/FSR must supply and install their own locking devices and retain all keys during the scope of this work. Upon completion of all work the TA must be in attendance when all locks/tags are removed.

7.1.D.2 General

7.1.D.2.1 All cabling, once installed, must be marked with a stamped stainless steel metal tag for all outside cabling and an appropriate label type for all inside cabling. The labels must be securely affixed to the cable at each end and through any deck, deck heads, and/or gland penetrations with the designation for each cable as provided in this specification.

7.1.D.2.2 All cabling which has been deemed surplus as a result of this specification item must be disposed of at the Contractor’s expense.

7.1.D.2.3 The Contractor must be responsible for ensuring that all areas have been thoroughly cleaned and free of any debris resulting from the performance of this specification item.

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- 7.1.D.2.4 The Contractor must use all stainless steel mounting hardware for the mounting of all equipment within this specification unless provided with the equipment.
- 7.1.D.2.5 Contractor must be responsible for unpacking/repacking all cable transits/glands.
- 7.1.D.2.6 The Contractor must follow existing cable trays throughout the vessel where fitted. Once installed, all cabling must be properly secured.
- 7.1.D.2.7 Equipment which have been removed as part of the performance of this specification must be returned to Canada in operational condition. They must be packaged properly. Shipping will be dealt with the 1379 Work arising process.
- 7.1.D.2.8 The contractor must ground all equipment as per OEM documentation.
- 7.1.D.3 **Existing Internal Communication System (ICS) and PA System Assessment**
- 7.1.D.3.1 The contractor must assess the complete Vingtor Internal communication system and public address system to evaluate operational performance and supportability.
- 7.1.D.3.2 The contractor must assess the systems capacity for future expansion with specific attention given to the possibility of newly added cabin spaces
- 7.1.D.3.3 The contractor must present findings to the Technical Authority in the form of a written report.
- 7.1.D.4 **Existing PA Assessment for Regulatory Compliance**
- 7.1.D.4.1 The contractor must assess the existing Vingtor public address system and identify any necessary upgrades in coverage to meet the requirements of Annex A. in the following areas:
- engine room;
- bow thruster compartment;
- propulsion room; and
- embarkation stations.
- 7.1.D.4.2 The high ambient noise areas a), b) & c) must also be assessed to install a flashing beacon visible to personnel in the spaces that will activate when the PA system is operated in these areas. The visual indicator must comply with IMO Resolution A. 1021 (26).

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7.1.D.4.3 The contractor must present findings to the Technical Authority and provide options complete with pricing and availability for PA upgrades to meet the requirements of section 7.1.C and the Regulations and Rules as per Annex A.

7.1.E PA Updates

7.1.E.1.1 The contractor must supply and install necessary equipment to update the PA.

7.1.E.1.2 The contractor must seek approval of the Technical Authority prior to purchasing any equipment.

7.1.E.1.3 The contractor must seek BV approval of the proposed new equipment layout and cabling diagram prior to installing.

7.1.E.1.4 The procurement and the fitting of the required additional equipment and cabling will be dealt with using the PSPC 1379 Work Arising process.

Locations

7.1.E.1.5 Ship wide

7.1.E.2 Interferences

7.1.E.2.1 The Contractor is responsible for the identification of interference items, their temporary removal, storage, and refitting to the vessel.

7.1.F Proof of Performance

7.1.F.1 Inspection Points

7.1.F.1.1 HOLD POINT 1: The contractor must seek approval from the TA prior to the commencement of any modification or installation of equipment to the existing PA system.

7.1.F.1.2 HOLD POINT 2: The contractor must provide the TA with the opportunity to verify that any interference equipment has been removed IAW this specification.

7.1.F.1.3 There are no cables continuity test requirement, however, all cables which have been installed by the Contractor that are found defective (fail continuity test) or damaged must be replaced at the Contractor's expense (material and labour).

7.1.F.2 Testing / Trials

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- 7.1.F.2.1 The TA and Chief Engineer will perform an Installation Check (IC) of all work specified herein to ensure conformity with this specification. The Contractor will be responsible for any necessary corrections.
- 7.1.F.2.2 All Testing and Commissioning activities related to the affected system(s) will be conducted by Canada.
- 7.1.F.3 **Documentation**
- 7.1.F.3.1 The contractor must provide all associated manuals related to this specification.
- 7.1.F.3.2 The contractor must provide all Type Approval certificates related to this specification.
- 7.1.F.3.3 The contractor must provide the following drawing set in both AutoCAD and PDF versions.
- a) For BV Approval, PA drawing set
 - b) BV Approved, PA drawing set and approval letters; for installation version. The contractor is responsible for submission and approval of the revised PA system plans to BV. The CCG TA must be copied on all correspondence.
 - c) PA drawing set; as-built version.
- 7.1.F.4 **Training**
- 7.1.F.4.1 Not used.

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8.0 Lifting Lug Testing & Recertification

8.1.A Identification

8.1.B The objective of this specification is to recertify lifting lugs testing and recertification as per the attached lifting lugs test sheet (N741).

8.1.C References

Drawings N740-452-100-106 Lifting Lugs outside of Mach Spaces
 N740-452-100-104_A Lifting Lugs in Bow Thruster Room
 N740-452-100-101_D Lifting Lugs in Engine Room
 N740-452-100-103_B Lifting Lugs in Prop Room
 N741- Lifting Lug Test Sheet

8.1.D Regulations and Standards

The applicable Acts, Regulations, Rules, Codes and Standards for this specification are contained in Annex A ‘Acts, Regulations and Rules Applicable to CCGS Mangystau-2’ attached. Additional Standards and Codes that are applicable for individual specification items are listed in Annex –B. Both Annexes will be provided in a separate document.

The following Regulations and standards apply to this item in particular:

Document	Title	Included Yes/No
Regulation	Cargo Fumigation and Tackle Regulations	No
	Maritime Occupational Health and Safety Regulations	
	Safe Working Practices Regulations	No
Rules	Rules for the Classification of Steel Ships (NR 467)	No
ISO 9712:2005	Non-destructive testing — Qualification and certification of personnel	No
ILO 152	Convention Concerning Occupational Safety and Health in Dock Work, adopted by the International Labour Conference on June 25, 1979. (Convention 152) Article 25(2) Occupational Safety regarding lifting appliances and loose tackle	No

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8.1.E **Scope of Work**

8.1.E.1 Work at heights (working aloft)

The Contractor must comply with the Fleet Safety and Security Manual, DFO/5737, as well as with the instructions for working on board the vessel, in addition to the relevant requirements of the Canada Labour Code during working aloft.

8.1.F The Contractor must provide all materials and equipment required to complete this specification as per ILO 152 with reference drawing list section 8.1.C

8.1.G The Contractor is responsible for the identification of interference items, their temporary removal, storage, and refitting to the vessel.

8.1.H **Documentation**

8.1.H.1 The contractor is to provide the test certificate documentation with identification tag to each lifting lug.

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9.0 HVAC Heating Flexible Duct Replacement

9.1.A Identification

9.1.A.1 The objective of this specification is to replace the short flexible ducting segments of the vessels HVAC ventilation system to individual accommodation, service and control spaces and supply and install new compliant sections of ducting. This work is to be carried out in conjunction/coordination with specification item number 5 Ventilation duct cleaning.

9.1.B References

9.1.B.1 Drawings

#	System	Plan #	Notes
a	Air Conditioning Plan, Forecastle Deck	740-571-011 r.e	RS-25 from PR100 (total 10) RS-35 from PR100 (total 4) Note electronics room unit
b	Air Conditioning Plan, Bridge Deck	740-571-012 r.b	RS-25 from PR100 (total 8)
c	Air Conditioning Plan, Wheelhouse	740-571-013 r.b	MS-35 from PR100 (total 4)
d	Air Conditioning Plan, Main Deck	740-571-010 r.a	RS-25 from PR100 (total 8) RS-35 from PR100 (total 9) MS-25 from PR100 (total 3)
e	Novenko HVAC Engineering Manual, Novenco Hi-Pres Cabin Units MS-25, (80 mm), RS-25 (80 mm), MS-35 (100 mm), RS-35 (100 mm)	MS25-C00-08 (Dwg 50600) RS35-C01-08 (Dwg 50026)	
	Photos of existing ducting		

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9.1.C Regulations and Standards

The applicable Acts, Regulations, Rules, Codes and Standards for this specification are contained in Annex A ‘Acts, Regulations and Rules Applicable to CCGS Mangystau -2’ attached. The following standards apply in addition to those of Annex A (as also summarized in Annex B ‘Additional Codes and Standards’). The following Regulations and Codes in particular apply:

	Title	Included Yes/No
Regulations	Vessel Fire Safety Regulations, Sections in general and 2(1), 3(1)	No
Convention	SOLAS II-2/9.7.1.1	No
Standard	ISO 1716:2002 Reaction to the fire tests for Building Products – Determination of the Heat of Combustion (As referenced in SOLAS II-2/9.7.1.1.1)	No
TP 14612	Procedures for approval of life-saving appliances and fire safety systems, equipment and products –	No
Information Letter	Letter to Industry from Transport Canada Marine Safety, (TCMSS) - Type Approval Certification to the Marine Equipment Directive (MED) on Canadian Vessels	Yes

9.1.D Contractor Supplied Material

- 9.1.D.1 The contractor must supply all materials, equipment and parts to perform the specified work unless otherwise stated.
- 9.1.D.2 The replacement ducting must fully meet the requirements of the Vessel Fire Safety Regulations and SOLAS II-2/9.7.1.1 and the ISO 1716:2002 standard as referenced. Note also the requirements of the letter from TCMSS indicating that European Union/MED Type Approval Certificates or Certificates issued by another Administration are not accepted. Approval certificates must be supplied with the new ducting and must meet Canadian requirements.
- 9.1.D.3 The current flexible duct sections consist of an inner section (non lined) and an outer insulated section. The replacement ducting may be of similar design or a single flexible duct of equivalent insulated value.

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9.1.D.4 The contractor will be responsible to confirm the size of the replacement ducting required from an onboard examination.

9.1.D.5 Photos Existing Ducting



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9.1.E Statement of Work

9.1.E.1 Lock-out Tag-out

Prior to commencing any work the Contractor must install /remove locks and tags accordingly during the scope of work. The vessel's TA will assist the Contractor in identifying the locations to perform the lock outs, but will not perform the actual lock out. The Contractor/FSR must supply and install their own locking devices and retain all keys during the scope of this work. Upon completion of all work the TA must be in attendance when all locks/tags are removed.

9.1.F General

9.1.F.1 This work must be coordinated with specification 5 HVAC System Cleaning, as well as other specifications requiring removal of the ceiling panels in accommodation, control station and service areas.

9.1.F.2 The Contractor shall remove the ceiling panels and mark/map them for identification for re-installation in original locations.

9.1.F.3 Panels supporting lights, smoke detectors, speakers or any other electrical equipment will only be removed at the discretion of the CCG TA.

9.1.F.4 Contractor shall be responsible for disposal of all unusable, original material.

9.1.F.5 Reference the drawings provided 9.1.B.1 (a to d), a total of 46 sections of flexible ducting are to be replaced in the HVAC ventilation system to individual accommodation, service and control spaces. Each section of flexible ducting connects from the existing rigid duct (PR100) to a heating and diffuser unit (Novenko MS-25 or RS 35). The contractor must ensure the existing flexible ducting is removed and replaced without damaging the existing components.

9.1.F.6 The flexible ducting sections are less than 2 metres in length for each location.

9.1.F.7 The flexible ducting must be secured at both ends with properly sized clamps fit for purpose and of corrosion resistant material.

9.1.F.8 The Contractor must be responsible for ensuring that all areas have been thoroughly cleaned and free of any debris resulting from the performance of this specification item.

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9.1.F.9 The Contractor is responsible for the identification of interference items, their temporary removal, storage, and refitting to the vessel.

9.1.G Proof of Performance

9.1.G.1.1 The contractor must provide the CCG TA with the opportunity to verify that each section of the flexible ducting has been satisfactorily replaced prior to the ceiling panels being re-installed.

9.1.G.1.2 Prior to acceptance, the HVAC system shall be verified satisfactorily functional and operational by the CCG TA and Chief Engineer upon completion of work. The Contractor will be responsible for any necessary corrections.

9.1.H Documentation

9.1.H.1 The contractor must provide an approval certificate meeting the requirements of subsection 9.1.B&C. The approval certificate must be reviewed by the Bureau Veritas surveyor and accepted as meeting Canadian requirements prior to installation.

9.1.H.2 The contractor shall provide copies of the manufacturer's product information sheets to the CCG TA.

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10.0 **Arc Flash Study**

10.1.A **Identification**

10.1.A.1 The Objective of this specification is to produce and deliver an electrical arc flash study, one-line diagram software model used in the calculations and install electrical hazards labels for the vessel.

10.1.B **References**

10.1.B.1 **Drawing**

Electrical One Line Dwg 740-870-070_B

Electrical Load Analysis 740-890-045_A

Short Circuit Report 75086-871-071 and 75086-871-070

Selectivity Report 75086-871-072

10.1.C **Regulations and Standards**

The applicable Acts, Regulations, Rules, Codes and Standards for this specification are contained in Annex A ‘Acts, Regulations and Rules Applicable to CCGS Mangystau-2’ attached. Additional Standards and Codes that are applicable for individual specification items are listed in Annex –B. Both Annexes will be provided in a separate document.

FSSM Procedures	Title	Included Yes/No
FSM	CCG Fleet Safety Manual	Yes
Standards	IEEE 1584 Guide for performing Arc Flash Hazard Calculations	Yes
	NFPA 70E Standard for Electrical safety in work place	Yes
Regulations	CSA 2001	No
	CSA Z462 Workplace Electrical Safety	Yes

10.1.D **Scope of Work**

10.1.D.1.1 Contractor must collect and list in the report the major equipment actual input data and source from where they were obtained.

10.1.D.1.2 Contractor must list all the assumptions used for equipment for which the actual technical data is not available.

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- 10.1.D.1.3 Contractor must, based on ship's operation scenarios listed in Electrical Load Analysis, calculate the incident energies for the switchboards, MCCs and panels as they are identified on Electrical One-Line Drawing based on the maximum and the minimum short circuit conditions. To be noted that FiFi (fire-fighting) operation scenario is not applicable and must not be used for calculations. Shore power supply scenario must be added for calculations..
- 10.1.D.1.4 Contractor must summarize in a separate table the maximum incident energy at switchboards, transformers, MCCs and panels and indicate scenario at which it is achieved. The table must list all the calculated incident energies in cal/cm² at working distance, arc flash boundaries, the arcing current, breaker trip time, the bolted three phase short circuit currents and equipment location. The method of calculating the bolted three phase short circuit current must be in accordance with IEC 61363-1, Electrical Installations of Ships and Mobile fixed Offshore Units. The bolted three phase short circuit current must be of ½ cycle time period as typical for ships installations. Contractor must provide explanations if other time period is used..
- 10.1.D.1.5 When "2 seconds rule" from IEEE 1584 is used, the Contractor must also provide calculated incident energy based on circuit breaker actual trip settings. Attention must be paid to construction of draw-out circuit breakers (whether or not they are fitted with insulated safety shutters) and availability of differential protection for ship's generators.
- 10.1.D.1.6 Contractor must maintain naming convention of electrical distribution system components and operation scenarios in accordance with referenced ship's drawings and calculations. Standards IEEE 1584 and CSA Z462 used for the study must be of the most recent edition.
- 10.1.D.1.7 Contractor must provide combined Arc Flash and Shock Warning Labels in accordance with the following template:

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 WARNING	
Arc Flash and Shock Hazard	
ARC FLASH PROTECTION	SHOCK PROTECTION
Working distance: 460 mm (18 in)	Shock hazard when cover is removed: 600 VAC
Incident energy: 5.0 cal/cm ²	Limited approach: 1.0 m (42 in)
Arc flash boundary: 1.2 m (46 in)	Restricted approach: 300 mm (12 in)
	Glove class: 0
Equipment location: MCC#3	Arc Flash Analysis by: XYZ Consulting
File: "ABC PLANT Rev X.xyz"	March 14, 2011 Std. IEEE 1584

The label must have an orange header with the wording “WARNING” and must include the following information:

- a) Working distance;
- b) Incident energy;
- c) Arc flash boundary;
- d) Nominal voltage of Shock Hazard;
- e) Limited approach boundary;
- f) Restricted approach boundary;
- g) Gloves class;
- h) Equipment location;
- i) File name (One-Line Diagram Model file name)
- j) Contractor company name;

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k) Date of completion;

l) Standards used.

10.1.D.1.8 Contractor must deliver two sets of labels. One set must be in English, the second set is in French. Each label must be of at least 3.5” x 5” size made of high adhesion polyester. Contractor must install one set of labels as chosen by Chief Engineer on the front doors of relevant equipment for arc electrical hazards notification.

10.1.D.1.9 Contractor must deliver the draft report to the TA for review and comments, in English. Contractor must not produce any warning labels until the final report has been approved by TA.

10.1.D.1.10 The report must include a summary, collected input data, methodology used, evaluated operation scenarios, assumptions, analysis of results, specify any concerns and provide recommendations. As much as practicable, the report must provide recommendations for available engineering options to reduce the incident energy levels on energized equipment to the level below 12 cal/cm² based on CSA Z462 “simplified two-categories PPE system”.

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11.0 Lathe Supply & Workshop Installation

11.1.A IDENTIFICATION

- 11.1.A.1.1 The objective of this specification is to supply and install a metal working lathe as specified in section 11.1.F of this SOW.
- 11.1.A.1.2 Contractor is responsible for the safe storage and handling of the lathe. The contractor is responsible to ensure that the manufacturer’s recommended climate controlled storage parameters for the lathe and accessories are met and maintained until transport to the vessel engine room has taken place.
- 11.1.A.1.3 The contractor must provide all materials, labour, and equipment required to complete the installation in the dedicated area on the vessel in consultation with the TA and OEM recommendations

11.1.B REFERENCES

11.1.C Drawing

11.1.D 740-101-001 H General Arrangement drawing

11.1.E **Regulations and Standards** - The applicable Acts, Regulations, Rules, Codes and Standards for this specification are contained in Annex A ‘Acts, Regulations and Rules Applicable to CCGS Mangystau-2’ attached. Additional Standards and Codes that are applicable for individual specification items are listed in Annex –B. Both Annexes will be provided in a separate document.

FSSM Procedures	Title	Included Yes/No
FSM	CCG Fleet Safety Manual	Yes
Regulations	CSA 2001	No
	CSA Z462 Workplace Electrical Safety	No

11.1.F Scope of Work

- 11.1.F.1.1 Contractor shall supply and install one new, unused 230V single phase Standard Modern 1440 lathe, including Telescopic Taper Attachment.
- 11.1.F.1.2 Contractor shall supply all Lathe accessories listed in Annex C.

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- 11.1.F.1.3 Contractor shall carefully transport the lathe to the engine room workshop for installation as per manufacturer’s instructions. Lathe may ship in separate parts and require assembly. Contractor is responsible for all transportation to, rigging for and assembly of the lathe in the engine room workshop.
- 11.1.F.1.4 Contractor is to install the lathe in a location at deck level next to the port bulkhead. Contractor shall be responsible to verify support structure “trueness/flatness” and to identify and implement required structural adjustments necessary to achieve the required mounting parameters as per the manufacturer’s installation/mounting instructions. Installation shall include all labour and CSMs to properly secure/mount the lathe in the workshop and agreed precise position. Precise positioning will be determined in consultation with the TA and referencing the vessel machinery arrangement drawing 740-600-001_E.
- 11.1.F.1.5 Contractor is responsible for electrical power supply connection and testing and shall be verified satisfactorily functional and operational by the CCG TA and Chief Engineer upon completion of work. The Contractor will be responsible for any necessary corrections.
- 11.1.F.1.6 **Deliverables**
- Equipment operation installation and maintenance Manuals
 - Manufacturer’s warranty documentation.