Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

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Bid Receiving Public Works and Government Services Canada/Réception des soumissions Travaux publics et Services gouvernementaux Canada
1713 Bedford Row
Halifax, N.S./Halifax, (N.É.)
Halifax
Nova Scotia
B3J 1T3
Bid Fax: (902) 496-5016

SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Atlantic Region Acquisitions/Région de l'Atlantique
Acquisitions
1713 Bedford Row
Halifax, N.S./Halifax, (N.É.)
Halifax
Nova Scot
B3J 1T3

Title - Sujet CCGS G. Peddle S.C dry Docking	
Solicitation No. - N° de l'invitation F5561-210006/A	**Amendment No. - N° modif.** 001
Client Reference No. - N° de référence du client F5561-21-0006	**Date** 2021-02-24
GETS Reference No. - N° de référence de SEAG PW-$HAL-311-11196	
File No. - N° de dossier HAL-0-85218 (311)	**CCC No./N° CCC - FMS No./N° VME**

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM Atlantic Daylight Saving Time ADT
on - le 2021-03-16 Heure Avancée de l'Atlantique HAA

F.O.B. - F.A.B. Specified Herein - Précisé dans les présentes
Plant-Usine: ☐ **Destination:** ☐ **Other-Autre:** ☑

Address Enquiries to: - Adresser toutes questions à: Dunne, Dave	**Buyer Id - Id de l'acheteur** hal311
Telephone No. - N° de téléphone (902) 401-4294 ( )	**FAX No. - N° de FAX** (902) 496-5016

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:
SEE HEREIN

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	**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**

Canada

Solicitation amendment 001 is issued to provide:

1. The minutes of the Bidders' Conference;
2. Bidder questions and Canada responses;
3. ITT amendments;
4. Specification amendments;
5. The Pricing Data Sheet; and
6. Specification Item HD-14.

MINUTES OF
THE BIDDERS CONFERENCE

Solicitation F5561-201259/A
Docking Refit CCGS G Peddle

The Bidders Conference for CCGS G Peddle was convened via teleconference on February 18, 2021 at 10:00 am. The following persons attended:

Name	Position	Organization
Dave Dunne	Contracting Authority	PSPC
Jeff Mercier	Technical Authority	CCG
Alex Curry	Chief Engineer	Peddle
Matthew Wilcox	Electronics Technician	CCG
Joseph D'Achille		Heddle
Guillaume Poirier		Chantier Naval Forillon
Kevin Gallant		CME
John Kinley		LIFE

Solicitation Closing

The CA advised that the Tender will close at 2:00 P.M. local, on March 9, 2021 and asked bidders if they felt the solicitation period provided sufficient time to prepare bids.

Bidders present indicated that at this time they do not feel that the solicitation period is sufficient to prepare bids. The CA agreed to extend the solicitation closing date to March 16, 2021 at 2:00 PM ADT.

Site Visit

Due to travel restrictions put in place by many Canadian provinces to reduce the spread of COVID-19, a vessel viewing has not be offered for this refit. Bidders requiring additional information are to contact the Contract Authority.

In lieu of a vessel viewing, the technical data package has been supplemented with several photos. Additional photos may be made available upon written request to the CA.

CGTA advised bidders that 5 video files have been added to the TDP that provides footage of the spaces in which the bulk of the work will take place.

One bidder stated that the videos and photos do not allow the bidders to accurately identify interference items. The specification currently states that in the vast majority of the work the contractor is responsible for interference. The bidder requested that CCG and PSPC assume the risk for interferences. CA and CGTA to discuss offline and a response will be provided in Solicitation Amendment 001.

Tender Deliverables

Bidders are reminded that in order for bids to be received, the following information must be included with the tender package, and received at PSPC prior to the Solicitation closing date:

- Fully completed and signed Page 1 of the Bid Solicitation document;
- Fully completed Annex F, Financial Bid Presentation Sheet;
- Fully completed Appendix 1 to Annex F, Pricing Data Sheet.

As part of the evaluation process all certifications and other requirements contained in parts 5 and 6 of the solicitation will be requested from the lowest bid received and evaluated. Therefore, all bids may not necessarily be fully evaluated.

Tender Submission

The Contracting Authority encouraged bidders to submit bids using ePost connect. Bidders are reminded that the mailroom at Bedford Row in Halifax is operating at reduced hours due to COVID-19, and the hours of operation are listed in the ITT document. Bids will not be accepted by fax or email.

In accordance with Standard Instructions 2003, section 08, paragraph 2(b)(ii), bidders should open an epost Connect conversation at least six business days prior to the solicitation closing date and time.

> *"send as early as possible, and in any case, at least **six business days** prior to the solicitation closing date and time, (in order to ensure a response), an email that includes the bid solicitation number to the specified PWGSC Bid Receiving Unit requesting to open an epost Connect conversation. Requests to open an epost Connect conversation received after that time may not be answered."*

Due to the nature of the solicitation, transmission of bids by facsimile will not be accepted.

Delivery

The work period is:

Commencement of Work	April 15, 2021
Completion of Work	August 16, 2021

Some discussion took place regarding the critical path of the refit being the double engine replacement. CGTA clarified that two engines are currently assembled in BC and will be shipped to the contractor's facility upon contract award. Based on timely receipt of the engines, bidders present indicated that the work period is sufficient for the scope of work.

Care and Custody

The refit is unmanned in accordance with article 7.15.3 of the ITT. Care and custody of the vessel will be transferred to the Contractor for the duration of this work period.

COVID-19

Bidders are reminded that NSOP-511 ***Minimum Screening Process for CCG Personnel Accessing a Contractors Facility During an Infectious Disease Outbreak such as COVID-19*** will apply, and Contractors must consider these requirements in their schedule and bid prices.

CCG will provide an endorsement letter, upon request, for submission to the applicable Provincial Government to seek an exemption to self-isolation requirements. Stakeholders are advised that the application must be submitted as early as possible to prevent delays.

Each province has a different response to COVID-19 travel so bidders must familiarize themselves with their province's current requirements and consider these requirements in their bid price. Upon award of a contract, the winning bidder must immediately take action to seek authorization for any sub-contractors and FSRs to enter the province, as required.

One bidder asked if Canada will compensate the contractor for any costs associated with any future changes to COVID-19 requirements that are not in effect as of the tender closing date. CA and CGTA will take offline and provide a response in Solicitation Amendment 001.

Vessel Security

Bidders are to take note of the physical security requirements outlined in Services, paragraph 6.

Pricing Data Sheet

The Pricing Data Sheet will be provided with the minutes of the bidders' conference as a Solicitation Amendment that will be published in the coming days, and will be structured in a manner that will allow PWGSC and the Technical Authority to cancel any work that has not been started in accordance with the Contractor's schedule. Any cancelled work will be credited in its entirety as per the Pricing Data Sheet if it has not been started.

Bidders are reminded that in accordance with Standard Instructions 2003, section 16, errors to extended pricing will be recalculated using the unit price.

One bidder requested a copy of the pricing data sheet in Excel format. The CA agreed to provide the pricing data sheet in Excel format, but cautioned bidders that no changes to the pricing data sheet are permitted. Only pricing fields may be populated by bidders. Pricing data sheets that have been otherwise altered will be rejected, rendering the bid non-responsive.

Concurrent Work

During the planned work period no concurrent work or outside contractors are expected to be working on the vessel.

Some crew will be on site during shipyard working hours performing inspections and minor maintenance work on a non-interference basis.

Safety Program

The Contractor must work in accordance with provincial labour standards with respect to safety and security and this must be demonstrated in the Contractor's Safety Program.

Lead Identification and Abatement

Lead coatings have been identified on vessels within the fleet. As such, all coatings must be tested prior to the execution of any work that will disturb any untested coatings. These steps are mandatory and are in place to prevent personnel exposure to airborne lead particles in accordance with Services paragraph 22 and H-09. This testing requirement also applies to all onboard equipment.

CGTA advised that no lead was identified on CCGS Corporal Teather and expects similar results.

Specification items added or removed for the work package

CGTA is considering adding a Rudder Inspection specification.

Solicitation Document

The CA advised bidders to familiarize themselves with the requirements of Annex “B” part 5 – FSR and Subcontractor Travel. These clauses provide instruction to bidders regarding travel directives and claims processes.

One bidder expressed concern that Annex B part 5 is transferring the risk of FSR and Subcontractor travel to the Contractor. The CA explained that the intent of this clause is to have the prime contractor manage subcontractor travel. Further information will be provided in Solicitation Amendment 001.

Specification Review

GENERAL NOTES

No questions or comments

1 – SERVICES

Para 19 price per square foot in two instances changed to price per square meter.

2 – PRODUCTION CHART

No questions or comments

HD-01 BERTHING AND MOORING

No questions or comments

HD-02 DRYDOCKING

No questions or comments

HD-03 HULL INSPECTION /BUTTS AND SEAMS

2.1.8 Estimate 50 UTM shots and 4 gas free certificates.

CGTA confirmed that gas free certificates do not include cleaning.

HD-04 ANODES

No questions or comments

HD-05 STORM VALVES & SEA CONNECTIONS INSPECTION

Some discussion took place regarding the level of effort required to remove sea valves vice inspecting them in situ. CGTA confirmed that the intent is for sea valves to be removed, inspected in the workshop, bench tested and subsequently reinstalled under the direction of ABS and the Inspection Authority. He further explained that the valves have a very high failure rate due to corrosion and it is likely that an estimated $30,000.00 of valves will need to be replaced via 1379. Also, without removing the valve we can't see the condition of adjoining piping where it connects to the valve and the flange faces. The list of valves and drawings are included in the TDP.

HD-06 HULL CLEANING AND VESSEL PAINTING

CGTA clarified that the NACE Inspector identified in the specification is a resource the shipyard may use at their discretion.

HD-07 SEA CHESTS AND STRAINERS

No questions or comments

HD-08 SPUR ROPE CUTTER INSTALLATION

CGTA clarified that the FSR identified in the specification is under contract with CCG to perform the installation and all costs for these services are covered by CCG.

HD-09 PROPELLER SHAFT SEALS AND SHAFT CLEARANCES

No questions or comments

HD-10 TANK INSPECTIONS

No questions or comments

HD-11 BOW THRUSTER GEAR OIL AND SEAL CHANGE

For bidding purposes assume 20L of CFM oil.

HD-12 ANCHOR, CHAIN AND CHAIN LOCKER INSPECTION

No questions or comments

HD-13 DOUBLE MAIN PROPULSION ENGINE REPLACEMENT

Report J20059-R01, rev 1 section 2 ***General CCG Requirements*** is deleted.

CGTA provided bidders with some context on the double engine replacement. The MSPV class vessels were not fitted with infrastructure to remove large engine parts . A soft patch was installed for removal and installation of large engine components. The engines experienced complete failure in 2020 and as such need to be replaced. Removal requires dismantling and removal piece by piece. FSR is responsible for engine removal and reinstall and is expected to be called in when engine room is ready and removal system has been built.

CGTA clarified that the FSR will be fully responsible for disassembly and removal of the engines. Any rigging required by the contractor will be covered in the FSR allowance or the cranage adjustment in Services. The contractor is responsible for removal and reinstallation of interferences and the removal system. All electrical work is the

responsibility of the contractor with the exception of the engine control system and electronics that are connected directly to the engines.

CGTA confirmed that the two MTU FSRs in Canada are Cullen Diesel and Wajax, and contact info is available upon written request to the CA.

H-05 ANNUAL DUCT CLEANING

No questions or comments

H-07 ALLIED CRANE ANNUAL INSPECTION

CGTA confirmed that the OEM is the FSR for Allied Cranes and are aware that they will be engaged to perform this work in April. FSR is located in Oregon and will require a letter of endorsement in order to receive a travel exemption.

LOTO will be shipyard responsibility in consultation with ships crew.

H-08 FRESH WATER TANK CLEANING AND INSPECTION

No questions or comments

H-09 LEAD COATING SURVEY & MANAGEMENT PLAN

No questions or comments

T1- Radar system replacement

No questions or comments

T2 - VHF Direction Finder Replacement

No questions or comments

T3 – Sat TV System

No questions or comments

T4 – VesseLINK Installation

No questions or comments

L-01 ANNUAL MEGGAR READINGS

No questions or comments

Open Discussion Items

No additional questions or comments

Meeting adjourned at 10:50 AST.

BIDDER QUESTIONS AND CANADA ANSWERS

Q1. Considering the ship's very long downtime, could a work period in autumn 2021 with wintering and re-release in spring 2022 be considered?
A1. No a change to the work period will not be considered.

Q2. Ref: HD-05 - Is bench testing required for all valves?
A2. Yes all new valves and repaired valves must be tested before being reinstalled.

Q3. Ref ITT Annex B section 5 - Is the Contractor responsible for the management of FSR and subcontractor travel?
A3. Yes, it is incumbent on the contractor to ensure that their subcontractors are aware of and comply with these travel requirements, and to present claims to the CA in accordance with Annex B. The contractor is strongly encouraged to discuss any variations with the CA prior to subcontractor travel, and exceptions will be considered on a case by case basis.

Q4. Will Canada compensate contractors for additional level of effort for measures put in place for COVID-19?
A4. Contractors are expected to comply with all public health directives. Any and all costs associated with complying with public health directives as of the solicitation closing date must be included in the bid price.

Q5. Will Canada assume the risk for interferences due to the inability to view the vessel?
A5. Canada will assume the risk for interferences that are not visible in the photos and videos included in the TDP.

INVITATION TO TENDER AMENDMENTS

Article 2.9.2:

INSERT:

Shipyard / ship repair facility	Applicable vessel transfer cost
Davie Québec Inc. Levis, QC	$33,045.00
Verreault Navigation Inc. Les Méchins, QC	$23,131.00
Heddle Marine, Hamilton, ON	$47,003.00
St John's Dockyard, St. John's, NL	$21,617.00
Lunenburg Industrial Foundry, Lunenburg, NS	$1,953.00
Irving Shipbuilding, Halifax, NS	$186.00
Canadian Maritime Engineering, North Sydney, NS	$10,130.00
Canadian Maritime Engineering, Sambro, NS	$763.00
Shelburne Ship Repair, Shelburne, NS	$4,152.00
Aecon Atlantic Industrial Inc. – Pictou, NS	$14,717.00
Chantier Naval Forillon, Gaspe, QC	$17,958.00

SPECIFICATION AMENDMENTS

Services

Paragraph 19 **DELETE** *price per square foot* (two instances) and **REPLACE** with *price per square meter*.

HD-02

2.1.10 **INSERT** for bidding purposes estimate 5 removal/insertion of keel blocks.

HD-03

2.1.8 **INSERT** Estimate 50 UTM shots and 4 gas free certificates.

HD-13

INSERT Paragraph 1.1 References:

J20059-R01
J20059-R02
J20059-R03
J20059-S01
J20059-S02
J20059-S03
J20059-S04
J20059-S05
J20059-S06

J20059-R01, rev 1 CCG Mid Shore Patrol Vessels/Hero Class MSPV Main Engine Removal Procedure: **DELETE** Part 2 *General CCG Requirements* in its entirety.

INSERT Specification item HD-14
(See attached)

PRICING DATA SHEET

See attached.

All other terms and conditions remain the same.

APPENDIX 1 TO ANNEX F
PRICING DATA SHEET

SERVICES (124 Days)	1	$
Para 11 Electric Power $_____ / kWh x 372,000 kWh (estimate)	2	$
Para 14 Cranage $_____ / hour x 20 hours (estimate)	3	$
Para 15 Removal/disposal oily water $_____ / L x 5,000 L (estimate)	4	$
Para 19 6mm Alley/Deck protection $_____ / m² x 150 m² (estimate)	5	$
Para 19 3mm Alley/Deck protection $_____ / m² x 100 m² (estimate)	6	$
Para 22(c) Subcontractor allowance	7	$50,000.00
Para 22(c) allowance markup ____% (max 10%) x $50,000 (estimate)	8	$
Para 22(g) Subcontractor allowance	9	$25,000.00
Para 22(g) allowance markup ____% (max 10%) x $25,000 (estimate)	10	$
Para 22(h) Subcontractor allowance	11	$10,000.00
Para 22(h) allowance markup ____% (max 10%) x $10,000 (estimate)	12	$
PRODUCTION CHART, ITP AND SUBCONTRACTOR ALLOWANCES	13	$
HD-01 BERTHING AND MOORING	14	$
2.1.3 Costs for Tugs and Pilots	15	$
HD-02 DRYDOCKING	16	$
2.1.10 Removal/Insertion of keel blocks $_____ / block x 5 blocks (estimate)	17	$
HD-03 HULL INSPECTION / BUTTS AND SEAMS	18	$
2.1.3,8 Arc gouging $_____ / ft x 50 ft (estimate)	19	$
2.1.3,8 Bead Weld $_____ / ft x 150 ft (estimate)	20	$
2.1.6 Person lift $_____ / hour x 8 hours (estimate)	21	$
2.1.8 NDT $_____ / shot x 50 shots (estimate)	22	$
2.1.8 Gas free certificates $_____ / certificate x 4 certificates (estimate)	23	$
HD-04 ANODES	24	$
HD-05 STORM VALVES AND SEA CONNECTIONS	25	$
HD-06 HULL CLEANING AND VESSEL PAINTING	26	$
Underwater Hull (total area = 330 m²)		
2.1.22 Blasting to bare steel $_____ / m² x 10 m² (estimate)	27	$
2.1.22 sweep blasting $_____ / m² x 320 m² (estimate)	28	$
2.1.22 Prep & apply 1 coat Intershield 300, 1 coat Intergard 263, & Interspeed 640 $_____ / m² x 10 m² (estimate)	29	$
2.1.22 Top coat prep & paint 1 coat of Interspeed 640 $_____ / m² x 330 m² (estimate)	30	$
Above Waterline to Top of Bulwark (total area = 146 m²)		
2.1.29 Prep & apply 1 coat Intershield 300, 1 coat Intergard 263, & Interthane 990 $_____ / m² x 25 m² (estimate)	31	$
2.1.22 Top coat prep & paint 1 coat of Interthane 990 $_____ / m² x 146 m² (estimate)	32	$
HD-07 SEA CHESTS AND STRAINERS	33	$
2.1.12 Securing tabs $_____ /tab x 3 tabs (estimate)	34	$
HD-08 SPUR ROPE CUTTER INSTALLATION	35	$
2.1.4 Machining $_____ /hour x 24 hours (estimate)	36	$
2.1.4 Mechanical Assistance $_____ /hour x 12 hours (estimate)	37	$
2.1.4 Welder $_____ /hour x 48 hours (estimate)	38	$
2.1.4 Fitter $_____ /hour x 36 hours (estimate)	39	$
2.1.4 Two 360 degree production welds	40	$

HD-09 PROPELLER SHAFT SEALS AND CLEARANCES	41	$_____
HD-10 TANK INSPECTIONS	42	$_____
2.3 Removal/disposal fuel $_____ / L x 5,000 L (estimate)	43	$_____
2.4 Removal/disposal waste oil $_____ / L x 2,000 L (estimate)	44	$_____
2.5 Removal/disposal sewage $_____ / L x 2,000 L (estimate)	45	$_____
HD-11 BOW THRUSTER GEAR OIL AND SEAL CHANGE	46	$_____
HD-12 ANCHOR, CHAIN AND CHAIN LOCKER INSPECTION	47	$_____
2.1.5,7 Coating Renewal $_____ / m² x 5 m² (estimate)	48	$_____
HD-13 DOUBLE MAIN PROPULSTION ENGINE REPLACEMENT	49	$_____
2 FSR allowance	50	$300,000.00
2 allowance markup ____% (max 10%) x $300,000 (estimate)	51	$_____
3 FSR allowance	52	$50,000.00
3 allowance markup ____% (max 10%) x $50,000 (estimate)	53	$_____
HD-14 RUDDER AND SKEG INSPECTION	54	$_____
H-05 ANNUAL DUCT CLEANING	55	$_____
H-07 ALLIED CRANE ANNUAL INSPECTION	56	$_____
2.1 FSR allowance	57	$40,000.00
2.1 allowance markup ____% (max 10%) x $40,000 (estimate)	58	$_____
H-08 FRESH WATER TANK CLEANING AND INSPECTION	59	$_____
12 Coating Renewal $_____ / m² x 5 m² (estimate)	60	$_____
H-09 LEAD COATING SURVEY AND MANAGEMENT PLAN	61	$_____
2.1 Subcontractor allowance	62	$10,000.00
2.1 allowance markup ____% (max 10%) x $10,000 (estimate)	63	$_____
T-1 RADAR SYSTEM REPLACEMENT	64	$_____
T-2 VHF DIRECTION FINDER REPLACEMENT	65	$_____
T-3 SAT TV SYSTEM	66	$_____
T-4 VESSELINK INSTALLATION	67	$_____
L-01 ANNUAL MEGGAR READINGS	68	$_____
TOTAL TAXES NOT INCLUDED (items 1 to 68) This is the price for Known Work in Annex F		$_____

HD-14 RUDDER, RUDDER BEARING AND SKEG INSPECTION

1: SCOPE:

The Contractor must prepare both rudders, their associated rudder stocks and rudder bearings for an ABS survey.

2: TECHNICAL DESCRIPTION

1. The Contractor must disconnect and remove the rudders from the vessel. Where electrical circuits and position switches are removed or disconnected, the connections must be clearly marked and recorded and all disconnected wiring must be marked and the connections recorded. Where linkages are fitted, their fitted distance must be marked and recorded prior to disconnection such that these distances can be re-established upon re-assembly.

2. The Contractor must ensure, prior to the start of disassembly, precautions are taken to ensure the reassembly and reinstallation of all system and equipment components are as per original and in accordance with manufacturer's specifications.

3. The Contractor must report by email all deficiencies as they are identified, to the TA and make recommendations for their prompt remedial action. Any approved repairs or replacements will be negotiated using form PSPC 1379, as applicable.

4. The Contractor must disconnect and remove the two rudders and rudder stock assemblies. These must be laid out for a ABS survey.

5. The Contractor must visually inspect the rudders and must note any defects. On each rudder the Contractor must remove the docking plug and perform a pressure test of not more than 3 psi for 1 hour.

6. This test must be witnessed by attending ABS surveyor and the TA. Any approved repairs or replacements will be negotiated using form PSPC 1379, as applicable.

7. The Contractor must visually inspect the rudder stocks for any defects; the diameters must be measured and recorded. Recommendations for repairs must be made accordingly. Any approved repairs or replacements will be negotiated using form PSPC 1379, as applicable.

8. The Contractor must inspect the rudder stock key and keyway for any defects using NDT LP Level II testing in full compliance with CAN/ONGC-48.9712. All findings must be recorded and

delivered to the TA as soon as practical. Any approved repairs or replacements will be negotiated using form PSPC 1379, as applicable.

9. The Contractor must visually inspect the top rudder bearings and bearing fasteners of both rudders for any defects and the findings must recorded and submitted to the ABS surveyor and the TA. Any approved repairs or replacements will be negotiated using form PSPC 1379, as applicable.

10. The Contractor must visually inspect the rudder carrier bearings for both rudder stocks for any defects and the findings must be recorded and submitted to the ABS surveyor and the TA. Any approved repairs or replacements will be negotiated using form PSPC 1379, as applicable.

11. Following the inspection the Contractor must reassemble both rudders, rudder stocks and carrier bearings as per original and in accordance with manufacturer's specifications. The Contractor must re-install the rudders and reconnect all equipment and items removed during the removal of the rudders.

12. Before installation of the rudders, the Contractor must replace the Nylon protection plates on the rudders. The Contractor must remove the existing plates and install new Thordon plates, as described in drawing TG-28380 (Thordon SXL Steering Wear Pads assembly), taking care to correctly adjust the holding screws. The Contractor must machine the rudder bearing hold ring to allow the Thordon plate to be 2mm higher than the ring on final installation. All materials and parts required to complete this work will be supplied by the contractor.

13. The Contractor must exercise care to ensure that all values recorded prior to disassembly are achieved during re-assembly and that all electrical connections are re-established as recorded.

14. The Contractor must ensure that the tiller achieves a proper fit and that the tiller nut is tightened up in the presence of the TA.

15. The Contractor must prepare a test and trials plan for the full functional test of the steering gear and rudders. This functional test must be carried out before the undocking of the vessel so that the full movement of the rudders can be observed.

HD-14 RUDDER, RUDDER BEARING AND SKEG INSPECTION

16. **Rudder Skeg Inspections**

The Contractor must ensure that all applicable environmental and safety precautions are taken to collect all residual liquid or other filling mixture inside in the skegs before the docking pugs are removed.

The Contractor must remove the docking plugs from the PORT and STBD skegs, drain all residual liquid or other filling mixture and must perform a pressure test of not more than 3 psi for 1 hour which is to be witnessed by the attending ABS surveyor and the TA.

The Contractor must float coat both skegs with water based corrosion preventative and then drain it before installing the docking plugs.

2.2 Location

Steering compartment

2.3 Interferences

Contractor is responsible for the identification of any interference items, their temporary removal and storage and reinstallation on the vessel.

3: REFERENCES:

3.1 Guidance Drawings/Nameplate data

AF6098-56100-02	Steering System Schematic of the Hydraulic System
AF6098-56100-03	Steering Gear Room Arrangement Plan
AF6098-10000-11	Rudders Construction Plan Sheet 1 of 2
AF6098-10000-11	Rudders Construction Plan Sheet 2 of 2
TG-28380	Thordon SXL Steering wear pads assembly

3.2 Standards and Regulations

1. Canada Shipping Act, 2001: Marine Machinery Regulations (SOR/90-264)

2. ABS, Rules & Regulations for the Classification of HSC

3. CAN/ONGC-48.9712

HD-14 RUDDER, RUDDER BEARING AND SKEG INSPECTION

3.3 Allowances

1. N/A

3.4 Owner Furnished Equipment

1. N/A

4: PROOF OF PERFORMANCE:

4.1 Inspection

The Contractor must afford the attending ABS surveyor and the TA the opportunity to inspect all disassembled components following disassembly and cleaning.

4.2 Testing

1. The Contractor must perform a functional test on the rudder system, verifying that the rudders move hard over to hard over and perform as per the specifications of the installation manual. This test must be carried out before the vessel is undocked.

2. The Contractor must conduct a dock trial where both the rudders systems are tested for correct operation in both directions and to ensure that proper rudder angle indications are received on all system gauges.

3. The Contractor must prepare a test and inspection plan for the sea trials of the steering gear system. Sea trials for the steering gear system must include hard over to hard over maneuvers of both rudders in the full follow-up mode and the non-follow-up mode. These trials must be conducted at various speeds of the vessel from zero speed to full ahead and astern conditions.

4. The Contractor must correct any defects, at no cost to Canada, that are a result of any work carried out by the Contractor on this specification Section.

5. Following initial testing and subsequent repairs, the Contractor shall afford the attending ABS surveyor and the TA the opportunity to witness a comprehensive operational test under full load of all disturbed equipment and systems.

4.3 Certification

1.N/A

HD-14 RUDDER, RUDDER BEARING AND SKEG INSPECTION

5: DELIVERABLES:

5.1 Reports, Drawings and Manuals

The Contractor must prepare and submit to the TA prior to the close of the contract and in accordance with Section 2.11 a comprehensive report of all inspections including all findings, recommendations, test results and recorded measurements.

5.1 Spares

1. N/A

5.3 Training

1. N/A