CCGC W. G . George
REFIT 2013
Date May 1 – May 29

Transit Included

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CCGC W.G. George
ANNUAL REFIT 2012

REFIT PRE-AMBLE

1. INTENT

The intent of this specification is to describe the necessary work involved in carrying out the ship's Annual Refit. All work specified herein and all repairs, inspections and renewals are to be carried out to the satisfaction of the Owner's Representative and, where applicable, the attending TC Marine Safety Inspector.

2. MANUFACTURER'S RECOMMENDATIONS

The overhaul and installation of all machinery and equipment specified herein shall be in accordance with the manufacturer's applicable instructions, drawings and specifications.

3. TESTING AND RECORDS

All test results, calibrations, measurements and readings shall be properly tabulated, compiled and two typewritten copies shall be presented to the Owner's Representative and attending surveyors.

4. WORKMANSHIP

The contractor shall use fully qualified, certified and competent tradesmen and supervision to ensure a uniform high level of workmanship. All work shall be subject to inspection by the Owner's Representative.

5. FACILITIES

Quotation shall include all of the necessary labor and equipment required for the erection of access staging, rigging, lighting, tugs, pilot service, necessary cranes and line handling.

6. MATERIALS AND SUBSTITUTIONS

Unless otherwise specified, all material is to be supplied by the contractor and all materials are to be new and unused. All replacement material in the form of jointing, packing, insulation, small hardware, oils, lubricants, cleaning solvents, preservatives, paints, coatings, etc., shall be in accordance with the equipment manufacturer's drawings, manuals or instructions. Where no particular item is specified, or where substitution must be made, the Owner's representative must approve all material offered.

7. REMOVALS

Any items of equipment to be removed and subsequently reinstalled in order to carry out work specified or for access to carry out the work specified, shall be jointly inspected for damages prior to removal by both the contractor and Owner's representative.

8. EXPOSURE AND PROTECTION OF EQUIPMENT

The contractor shall provide temporary protection for any equipment or areas affected by this refit. The contractor shall take proper precautions to maintain in a proper state of preservation any machinery, equipment, fittings, stores or items of outfit which might become damaged by exposure, movement of materials, sand grit or shot blasting, airborne particles from sand, grit or shot blasting, welding grinding, burning, gouging, painting or airborne particles of paint. Any damage shall be the responsibility of the contractor. Government furnished equipment and materials shall be received by the contractor and stored in a secure warehouse or storeroom having a controlled environment appropriate to the equipment in accordance with the manufacturer's instructions.

9. LIGHTING AND VENTILATION

Temporary lighting and/or temporary ventilation required by the contractor to carry out any item of this specification shall be supplied, installed and maintained in a safe working condition by the contractor and removed upon the completion of work.

10. CLEANLINESS

The contractor shall at all times maintain the work areas in which his personnel have access in a clean condition and free from debris. Upon completion of this refit, the contractor shall ensure that the vessel is in a clean condition, free from all foreign material in any system or location placed there as a result of this refit. The contractor shall provide adequate temporary protection for any equipment or areas affected by this refit. The contractor shall dispose of any oil and water residue, which accumulates in the machinery space bilge as a result of any refit work detailed in this specification.

11. ASBESTOS

Any and all insulation materials shall be asbestos free and approved for the required application.

12.ENTRY INTO ENCLOSED SPACES

Entry certificates shall clearly state the type of work permitted and shall be renewed as required by the regulations. Additional copies of these certificates shall be posted in conspicuous locations for the information of ship and contractor personnel.
In addition, the Contractor is required to keep a log of all personnel entering and leaving any enclosed space.

The Contractor shall have in place a Safety Management System that complies with the Provincial Regulations and deals with the contractor responsibilities for items such as Hot Work, Confined Space Entry, Diving, Diving Operations, lock out and tag out procedures and Dry-docking.

11. DRAWINGS

All drawings and drawing revisions that the contractor is requested to do in the execution of this contract shall be of a quality equal to that of the drawings that are requested to be updated. For example, drawings that have been lettered and dimensioned in a professional manner shall not to be updated using freehand. Prints and copies that a contractor is required to provide shall be made on one piece of paper.

12. TRANSDUCERS

The contractor shall not paint the transducers and all transducers shall be afforded the necessary protection during hull cleaning, blasting, burning, welding and coating operations.

13. DOCK AND SEA TRIALS

Prior to the completion of the refit, the vessel shall proceed on a one–hour Dock trial and sea trial with the Contractor's Representative on board. Results of the sea trial shall be documented by the Chief Engineer. Any noted deficiencies during the trial will be addressed.

14. WELDING

The primary contractor or subcontractor shall be certified by the Canadian Welding Bureau (CWB) to standard CSA W47.2M 1987, Division I, II or III - Certification of Companies for Fusion Welding of Aluminum. All welding shall be completed using Canadian Welding Bureau (CWB) Certified personnel and equipment. The required CWB certification must be in place for the appropriate material, personnel and process that is associated with this work.

15.SMOKING

The Public Service Smoking Policy forbids smoking in all Government ships in areas inside the ship where shipyard personnel will be working. The contractor shall inform shipyard workers of this policy and ensure that it is compiled with.

16.ELECTRICAL STANDARDS

Any electrical installations or renewals shall be in accordance with the latest editions of the following marine standards:

(a) TP 127E-TC Marine Safety Electrical Standards.

(b) IEEE Standard 45 - Recommended Practice for Electrical Installation on Shipboard.

If any cable installed within this contract is found to be damaged, shorted or opened as a result of the manner of installation, the entire length of cable shall be replaced and installed at no cost to the Department. Plastic tie-wraps may be used to secure wiring in panels or junction boxes only.

17.OWNER'S REPRESENTATIVE

Throughout this document, there is made reference to the Owner's Representative. For the purpose of this document, the Owner's representative is defined as the Chief Engineer of the Vessel, or in lieu of his/her presence, the Project Engineer, Small Vessels can be assumed to be the Owner's representative.

CCGS W.G. GEORGE VESSEL CHARACTERISTICS:

SHIP PARTICULARS:

DISPLACEMENT ..... 27.5 Tonnes
LENGTH OVERALL.....15.77M (51' 9")
BEAM.....5.18M (17'.)
FRAME SPACING.....Frame 0-3 535mm (21")
3-7 575mm (23")
7-23 650mm (25-1/2")

Engines:

Caterpillar 3408
Port: Arrangement # 7W7583 (530HP@ 2100RPM)
Stbd: Arrangement # 7W7583 (530HP@ 2100RPM)

Part 1: SCOPE:

1.1
The intent of this specification shall be to have the contractor provide services to the vessel while in dry-dock and afloat during the complete refit period and disconnected on termination of refit, the contractor shall supply all material to the point of onboard connection

1.2
This work shall be carried out in Conjunction with the following: Drydocking

Part 2: REFERENCES:

2.1
Guidance Drawings/Nameplate Data

2.2
Standards

2.3
Regulations

2.4
Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 The contractor shall provide all the labor and material for the rigging of one contractor supplied boarding gangway complete with safety net and two handrails The gangway shall be illuminated for safe use at night and shall be fitted to the satisfaction of the c/o

3.1.2 The contractor shall provide electrical shore power of 240 volts ac single phase100 amp. The contractor shall supply the power to the ship and connect from single-phase isolation transformer to 240/120 volt panel via the shore power plug. The contractor shall quote on supplying 2000 kilowatt hours and provide quote per additional kilowatt hour. Total kilowatt hours will be adjusted at the conclusion of the refit. Meter readings shall be witnessed by owner rep. and contractor prior to connection and upon disconnection of the service

3.1.3. The contractor shall provide fire protection for the vessel in the form of one hose 1 ½ inches in diameter, complete with approved fire nozzle, connected to a fully operable fire hydrant. The hose shall be long enough to reach all parts of the vessel. The hydrant shall have a wrench fitted at all times during the refit
3.1.4. The contractor shall provide a suitable garbage container and empty it when it reaches 75% full. The contractor shall remove all refuse daily from the ship including all scale and sludge from tanks
3.1.5. The contractor shall quote on the disposal of 200 litres of oily water mixture from tanks and bilges. The contractor shall quote cost per each additional 50 litre. The contractor shall retain the services of a qualified disposal agent that shall comply with all provincial laws and provide evidence of proper disposal
3.1.6. The contractor shall supply and fit cardboard or equivalent to protect interior decks for the duration of the refit. The contractor shall bid on supplying 7.5 sq. meters
3.1.7. The contractor shall provide access for the vessels crew to washroom facilities including flush toilets and washbasins with hot and cold running water
3.1.8. The contractor shall provide a location for use as an office by the Chief Engineer. The office shall be equipped with a desk and office style chair. The office shall be equipped with a phone. The office shall be equipped with a computer with internet and a printer (Windows 98 or higher)The contractor shall also provide access to a fax machine
3.1.9. The successful bidder shall prepare and present a plan which outlines what action(s) will be taken in the event of a fire or unauthorized access
3.1.10. At the end of the refit the contractor shall clean the vessel (bilge, decks, deck heads, bulkheads and all equipment) to the satisfaction of the owners rep.

3.2
Location

3.3
Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

4.1.1 All work shall be completed to the satisfaction of the Chief Engineer.

4.2 Testing

N/A

4.3 Certification

N/A

Part 5: DELIVERABLES:

5.1
Drawings/Reports

5.2

Spares
N/A
5.3
Training
N/A
5.4
Manuals
N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to have the contractor provide all equipment and services necessary to dock and undock the vessel

1.2 This work shall be carried out in Conjunction with the following:

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.2 Standards

2.3 Regulations

2.4 Owner Furnished Equipment

2.4.1 The contractor shall supply all materials, equipment, and parts required to perform the specified work unless otherwise stated.

Part 3: Technical Description

3.1 General

3.1.1. The contractor shall provide all equipment and services necessary to dock and undock the vessel

3.1.2. The contractor shall quote on the unit day cost

3.1.3. The contractor shall be responsible for the handling of all ships lines

3.1.4. The contractor shall ensure that docking is in accordance with docking plan

3.2 Location

3.3 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

4.1.1 All work shall be completed to the satisfaction of the Chief Engineer.

4.2 Testing

N/A

4.3 Certification

N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.2 Spares

N/A

5.3 Training

N/A

5.4 Manuals

N/A

Part 1: SCOPE

1.1 The intent of this specification shall be to have the contractor remove, service and install vessel propellers

1.1.2 This work shall be carried out in Conjunction with the following: Drydocking

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.2 Standards

2.3 Regulations

2.4 Owner Furnished Equipment

2.4.1 The contractor shall supply all materials, equipment, and parts required to perform the specified work unless otherwise stated.

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 The contractor shall remove both propellers (Hawboldt Mega Four – four bladed propellers)

3.1.2. The contractor shall remove if required after inspection by C/E both propellers from the vessel and shall transport the propellers to/from Atlantic Propeller Repair, 12 Kyle Avenue, Donovan's Industrial Park Mount Pearl. Contact: Earl Latham. Ph. 7479200

3.1.3 The contractors bid shall include an allowance of $2,500.00 for the refurbishment and shipping of 2 propellers. The actual amount will be increased or decreased using PWGSC-1379 after the propellers are repaired.

3.1.4 The Contractor shall re-install the propellers using 2 new 3/8 stainless steel bolts and wire on the Propeller cone.

3.1.5 Vessel to have dock and sea trials to ensure props installed properly.

3.2 Location

3.2.1. Fitted on tailshafts.

3.3 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

4.1.1. All work shall be completed to the satisfaction of the Chief Engineer.

4.2 Testing N/A

4.3 Certification N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.2 Spares
N/A

5.3 Training
N/A

5.4 Manuals
N/A

Part 1: SCOPE:

1.1
The intent of this specification shall be to have the contractor Hydro blast (1500-2000 psi) and completely clean the aluminum hull from the keel to the maindeck, including both rudders and trim tabs. (The contractor shall bid on a total hull area of 112 sq) meters

1.2
This work shall be carried out in Conjunction with the following:

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.2 Standards

2.2.1 All coatings to be applied according to manufacturer's specs.

2.3 Regulations

2.4 Owner Furnished Equipment

2.4.1. The contractor shall supply all materials, equipment, and parts required to perform the specified work unless otherwise stated.

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 All staging , cranes, screens, lighting, shelter, heaters and any other support services, equipment, paint and materials necessary to carry out these specs. Shall be contractor supplied. The entire hull of the ship from the keel to the main deck, including both rudders and trim tabs shall be Hydro blasted and scraped clean of all marine growth and shall be water washed (1500-2000 psi) to remove any soluble salts
3.1.2 The hull shall be inspected by the and Chief Engineer and any areas of damaged hull coating shall be identified.

3.1.3 Any repair or application of damaged hull coating will be covered by PWGSC 1379 action and raised as an extra to the contract. Contractor to bid on repair of 100 sq. ft. and unit cost for additional sq. foot.

3.1.4. Sea bay grids are to be protected during the application of coating and orifices shall be proved original diameter before undocking

3.1.5. The contractor shall Hydro blast (1500-2000 psi) or mechanical buff to SP-3 the entire hull in preparation for the antifouling coating and CG red coating up to the main deck level

3.1.6. The contractor shall supply and apply the following (A) 1 coat of Amercoat ABC #4 Antifouling Red @3-4 mils DFT. Underwater area only including rudders and trim tabs. The contractor shall bid on 72 sq. meters and include unit cost per sq. meter (B) 1 coat of Amershield Polyurethane CG Red @ 3-4 mils DFT. Waterline to main deck. The contractor shall bid on 40 sq. meters and include unit cost per sq. meter. (C) 1 coat of Amershield Polyurethane White & Black @ 3-4 mils. The CG white hull stripe with black outline

3.1.7. The contractor shall reapply all draft markings using contractor supplied white paint (Amershield Polyurethane)

3.1.8. The contractor shall supply and apply new Coast Guard self adhesive white/Black vinyl lettering for the vessel markings

3.1.9. The contractor shall reapply the vessel names and port of registry using contractor supplied white paint (Amershield Polyurethane)

3.2 Location

3.3 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

All work shall be completed to the satisfaction of the Chief Engineer.

4.2
Testing

N/A

4.3 Certification

N/A

Part 5: DELIVERABLES:

5.1
Drawings/Reports

5.1.1 Stencils 2 Coast Guard 6 inch letters
2 Garde cotiere 6 inch letters
2 Fisheries and Oceans 3 inch
2 Peches et Oceans 3 inch
4 Canada
2 6 inch Maple Leafs

5.2 Spares

N/A

5.3 Training

N/A

5.4 Manuals

N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to have the contractor remove hull fender system to allow for hull inspection, cleaning and painting

1.2 This work shall be carried out in Conjunction with the following: HD- 4 Hull Inspection and painting.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.2 Standards

2.2.1 All coatings to be applied according to manufacturer's specs.

2.3 Regulations

2.4 Owner Furnished Equipment

2.4.1. The contractor shall supply all materials, equipment, and parts required to perform the specified work unless otherwise stated.

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 The existing D-rubber fender system to be completely removed from the vessel to allow for inspection and painting of hull

3.1.2 The hull shall be inspected by the Chief Engineer and any areas of damaged hull coating shall be identified.

3.1.3 The section fitting around the bow to be replaced with new owner supplied D-rubber of 4 meters in length. The new fender will have to be fitted and drilled to fit the 11.4cm fender channel. New S/S ½ inch lock nuts to be installed on the mounting fasteners. 170 nuts required.

3.2 Location

Mounted in the fender channel, running the full length of the vessel on both sides. There is also a separate transom section

3.3 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

All work shall be completed to the satisfaction of the Chief Engineer.

4.2 Testing N/A

4.3 Certification N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.2 Spares N/A

5.5 Training N/A

5.6 Manuals N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to have the contractor open up and clean and paint the three sea bays and shall bid on a total area of 1 sq. meter and provide the unit cost per 0.5 sq. meter.

1.2 This work shall be carried out in Conjunction with the following: Dry-docking

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.2 Standards

. All coatings to be applied according to manufacturers' specs

2.3 Regulations

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 The contractor shall remove the sea bay grids and water blast the sea boxes and grids

3.1.2 The contractor shall ensure that the slotted holes in the grids are punched clean

3.1.3 The contractor shall supply and apply the same paint coatings as outlined for the under water hull

3.1.4 The contractor shall replace the sea bay grids using new 316 stainless steel fasteners and locking wire

3.2 Location

Port main suction @ Frames 12 – 13 Stbd. Main suction @ Frames 12 – 13 Fire Pump suction @ Frames 8 – 9

3.3 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

All work shall be completed to the satisfaction of the Chief Engineer.

4.2 Testing

N/A

4.3 Certification

N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.2 Spares

N/A

5.3 Training

N/A

5.4 Manuals

N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to have the contractor remove and replace with new all the sacrificial zinc anodes on the hull, the rudders, the trim tabs and the tail shafts.

1.2 This work shall be carried out in Conjunction with the following: Dry-docking

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.2 Standards

2.3 Regulations

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 The contractor shall supply and install 16 zinc anodes

3.1.2 The contractor shall supply all stainless steel fasteners to secure all anodes

3.2 Location

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3.2.1 Bolted to the transom 9x6x1 ½ in . 2 bolted to the keel teardrop shape 3x9x1 ¼ in. 2 installed between frames 7& 13 teardrop shape 3x9x1 ¼ in. 2 on each trim tab 6 ½ in circ. 2 installed as collars on each shaft 2 ¾ in. inside diameter. 1 on each rudder teardrop shape 3x9x1 ¼ in.

3.3 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

All work shall be completed to the satisfaction of the Chief Engineer.

4.2 Testing

N/A

4.3 Certification

N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.2 Spares

N/A

5.3 Training

N/A

5.4 Manuals

N/A

Part 1: SCOPE:

1.1.1 The intent of this specification shall be to have the contractor open up for inspection and service of nine through-hull valves and reinstall

1.1.2 This work shall be carried out in Conjunction with the following: Drydocking

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.2 Standards

2.3 Regulations

2.4 Owner Furnished Equipment

2.4.1 The contractor shall supply all materials, equipment, and parts required to perform the specified work unless otherwise stated.

Part 3: TECHNICAL DESCRIPTION:

3.1General

3.1.1. The contractor shall open nine noted sea connection valves

3.1.2. The contractor shall ensure that the valve seats and spindles are cleaned

3.1.3. The contractor shall lap in all the valve seats and install new stem packing. All valves to be inspected by chief engineer and Transport Canada before reinstallation.

3.1.4. The contractor shall reinstall all removed valves with new flange packing

3.2 Location

3.2.1

Bilge O/B	FR 12 P&S	1-1/2" SDNR, flanged
Fire Pump O/B	FR 9 Port	1-1/2" SDNR, flanged
M/E Cooling	FR 13 P&S	2-1/2" SDNR, flanged
M/E De-icing	FR 13 P&S	1" 90 degree SDNR, flanged
Fire Pump Suction	FR 8 Port	2" 90 degreee SDNR, flanged
Fire Pump De-icing	FR 8 Port	1" 90 degree SDNR, flanged

3.3 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.2 Inspection

4.1.2. All work shall be completed to the satisfaction of the Chief Engineer and Transport Canada.

4.2 Testing N/A

4.3 Certification N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.2 Spares N/A

5.3 Training N/A

5.4 Manuals N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to have the contractor remove main engine sea water coolers, have them cleaned and pressure tested to the satisfaction of owner rep.

1.2 This work shall be carried out in Conjunction with the following: Drydocking and HD-10

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.2 Standards

2.3 Regulations

2.4 Owner Furnished Equipment

2.4.1. The contractor shall supply all materials, equipment, and parts required to perform the specified work unless otherwise stated.

Part 3: TECHNICAL DESCRIPTION:

3.1General

3.1.1. The contractor shall drain and store in clean containers, the jacket water coolant from both engines (approx: 350lt) to allow for disconnection of piping to the heat exchangers

3.1.2. The contractor shall remove port and stbd main engine sea water coolers and have them cleaned and air pressure tested to the satisfaction of chief engineer

3.1.3. The Contractor shall re-install the coolers using new gaskets in affected piping and new cooler seals and anodes in the end covers.

3.1.4. The contractor shall supply 8 gallons of Caterpillar Pre-mix antifreeze #238-8648 to make up for any spillage

3.2 Location

3.2.1 In Engineroom, outboard of the main engines

3.3 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

4.1.1 All work shall be completed to the satisfaction of the Chief Engineer.

4.2 Testing

4.3 Certification N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.2 Spares N/A

5.3 Training N/A

5.4 Manuals: N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to have the contractor remove and realign the 4inch S/S jacket water piping making connection with the main engines

1.2 This work shall be carried out in Conjunction with the following: Drydocking and HD-9

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.2 Standards

2.3 Regulations

2.4 Owner Furnished Equipment

2.4.1 The contractor shall supply all materials, equipment, and parts required to perform the specified work unless otherwise stated.

Part 3: TECHNICAL DESCRIPTION:

3.1General

3.1.1 The contractor is to remove both sections of 4" J/W piping from the heat exchanger and main engine, cut to allow turning or removal of the ends as to allow the straight alignment of the fitted high temperature bellows. No new piping required

3.1.2 The contractor shall weld affected sections and pressure test the welds to the satisfaction of the Chief Engineer before installation

3.1.3 The contractor will refill the main engines with recovered antifreeze and use listed extra for top up.

3.2 Location

3.2.1 Engine room outboard of both main engines

3.3 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.3 Inspection

4.1.3. All work shall be completed to the satisfaction of the Chief Engineer.

4.2 Testing
N/A

4.3 Certification
N/A

Part 5: DELIVERABLES:

5.1
Drawings/Reports

5.2
Spares
N/A

5.3
Training
N/A

5.4
Manuals
N/A

Part 1: SCOPE:

1.2 The intent of this specification shall be to have the contractor replace existing run of aluminum piping with new S/S piping of equal dimension

1.3 This work shall be carried out in Conjunction with the following: Drydocking

Part 2: REFERENCES:

2.1.2 Guidance Drawings/Nameplate Data

2.1.1 Standards

2.1.2 Regulations

2.2 Owner Furnished Equipment

2.2.1 The contractor shall supply all materials, equipment, and parts required to perform the specified work unless otherwise stated.

Part 3: TECHNICAL DESCRIPTION:

3.1General

3.1.1 The contractor shall remove the existing Sea Water aluminum inlet piping to the main engine exhaust high rises

3.1.2 The contractor shall fabricate new welded Stainless Steel schedule 5 piping to replace existing pipe. All pipe fittings are to be welded.

Materials required (all welded 2 inch S/S, sch-5 dimensions):

2 - pipe flanges
1 m - pipe
1 - 22 degree elbow
3 - 45 degree elbows

3.1.3 Contractor shall air pressure test all the welds to the satisfaction of the chief engineer before installation

3.2 Location

3.2.1 The sections of piping are aft of both main engines under the exhaust high rises.

3.3 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

4.1.1 All work shall be completed to the satisfaction of the Chief Engineer.

4.2 Testing

N/A

4.3 Certification

N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.2 Spares **N/A**

5.3 Training **N/A**

5.4 Manuals **N/A**

Part 1: SCOPE:

1.1 The intent of this specification shall be to have the contractor remove trim tab cylinders and have new seals installed in both units.

1.2 This work shall be carried out in Conjunction with the following: Drydocking

Part 2: REFERENCES:

2.1Guidance Drawings/Nameplate Data

2.2 Standards

2.3 Regulations

2.4 Owner Furnished Equipment

2.4.1 The contractor shall supply all materials, equipment, and parts required to perform the specified work unless otherwise stated.

Part 3: TECHNICAL DESCRIPTION:

3.1General

3.1.1 The contractor shall remove both port and starboard trim tab hydraulic rams.

3.1.2 The contractor shall have both hydraulic rams overhauled.

3.1.3 The contractor shall ensure that the trim tab hydraulic circuit is fully operational upon installation and ensure trim tabs operate correctly before and during sea trials.

3.2 Location

3.2.1 Trim tabs are located on port and starboard aft of vessel.

3.3 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.1Inspection

4.1.1 All work shall be completed to the satisfaction of the Chief Engineer. Contractor shall inspect the operation of trim tabs before and during sea trials.

4.3 Testing
N/A

4.3 Certification
N/A

Part 5: DELIVERABLES:

5.1Drawings/Reports

5.2Spares
N/A

5.3Training
N/A

5.4Manuals
N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to have the contractor obtain the services of a Caterpillar FSR to check, inspect and adjust the valve clearances on both Caterpillar 3408 diesel engines. Allowance of $2500.00 to be adjusted if required by 1379 action.

1.2 This work shall be carried out in Conjunction with the following: dry-docking

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.2 Standards

2.3 Regulations

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 The FSR shall remove all valve covers and visually inspect the rocker arms and bridges.

3.1.2 The FSR shall check the valve clearances and set them to manufacture specification as required.

3.1.3 The FSR shall report to the Chief Engineer any faults of defective parts found.

3.2 Location

3.3 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

All work shall be completed to the satisfaction of the Chief Engineer. After completion of adjustment and returning equipment to operating condition. The Main Engines shall be test run for a period of not less than 30mins. any adjustments required will be carried out by FSR.

4.2 Testing

N/A

4.3 Certification

N/A

Part 5: DELIVERABLES:

5.1
Drawings/Reports

5.2

Spares

N/A

5.3
Training

N/A

5.4
Manuals

Caterpillar 3408 marine engine service manual

Part 1: SCOPE:

1.4 The intent of this specification shall be to have the contractor remove alternators from each Main Engine and have each unit inspected, overhauled and then reinstalled.

1.5 This work shall be carried out in Conjunction with the following: Drydocking

Part 2: REFERENCES:

2.5 Guidance Drawings/Nameplate Data

2.6 Standards

2.7 Regulations

2.8 Owner Furnished Equipment

2.4.1. The contractor shall supply all materials, equipment, and parts required to perform the specified work unless otherwise stated.

Part 3: TECHNICAL DESCRIPTION:

3.2 General

3.1.1. The contractor shall remove the alternators (Leece-Neville # A0012272AA, 24 V 280 amp) from each main engine, insuring all wiring is well marked for reassembly.

3.1.2. The contractor shall send each alternator to Island Power Products, 51 Sagona Avenue, Mount Pearl, NL. Contact Jim Stanford at ph: 745-8658 fax: 745-8659.

3.1.3. The contractors bid shall include an allowance of $2,500.00 for the refurbishment of the two alternators. The actual amount will be increased or decreased using PWGSC 1379 action after the alternators are repaired.

3.1.4. The Contractor shall bench test the operation of each unit.

3.1.5. The Contractor shall reinstall each unit, using new belts owner supplied.

3.4 Location

3.2.1. The alternators are located on the forward inboard side of the main engines

3.5 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.4 Inspection

4.1.4. All work shall be completed to the satisfaction of the Chief Engineer. Contractor shall inspect the operation of trim tabs before and during sea trials.

4.2 Testing
N/A

4.3 Certification
N/A

Part 5: DELIVERABLES:

5.5 Drawings/Reports

5.6 Spares N/A

5.7 Training N/A

5.8 Manuals N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to have the contractor conduct insulation testing on the main switchboard and on 8 circuit panels. Work to be carried out by certified marine electrician. Any readings below 2 megs to be discussed with the owners rep.

1.2 This work shall be carried out in Conjunction with the following: Dry-docking

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.2 Standards

2.3 Regulations

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 Insulation testing to be carried out on the following
Main switchboard (33 circuits)
240/120 vac shore power panel (14 circuits)
FWD.. power panel E-5 (10 circuits)
WH power panel E-1 (13 circuits)
12 VDC Nav panel E-3 (10 circuits)
24 VDC Nav panel E-2 (10 circuits)
24 VDC HVAC Power panel E-6 (6 circuits)
Power panel E-7 (12 circuits)
Nav light panel (10 circuits)

3.1.2 A copy of all readings to be given to owners rep.

3.1.3 Any readings below 2 Megs to be discussed with the owners Rep. and will be corrected using PWGSC 1379 action and raised as an addition to the contract

3.2 Location

Main switchboard in aft. cabin. Shore power panel in Lazerette. 1 panel in fwd. cabin. The others are all in the wheelhouse

3.3 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

All work shall be completed to the satisfaction of the Chief Engineer.

4.2 Testing
N/A

4.3 Certification
N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.2 Spares

N/A

5.3 Training
N/A

5.4 Manuals
N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to have the contractor obtain the services of a certified inspector to test and ensure the correct operation of the smothering system and the fire detection system. This is a Kidde Fenwal system with 2 cylinders and the fire detection panel is an Edwards System Technologies. This is to be carried out to the satisfaction of a Transport Canada Marine Surveyor

1.2 This work shall be carried out in Conjunction with the following: dry-docking

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.2 Standards

2.3 Regulations

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 Test and prove to the Transport Canada that both systems are working properly

3.1.2 Supply certificates for both systems and all portable fire extinguishers to be inspected as well

3.2 Location

CO2 bottles are on the outside aft. deck. Fire detection panel is in the wheelhouse stbd. side. Heat sensors

Smoke Detectors and portable fire extinguishers are located all through the ship

3.3 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

All work shall be completed to the satisfaction of the Chief Engineer.

4.2
Testing N/A

4.3 Certification N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.2 Spares N/A

5.3 Training N/A

5.4 Manuals N/A