CCGS TELEOST

Annual Refit 2013

Index

PREAMBLE

1. INTENT

These specifications are supplied to the ship repairer, here in after referred to as the Contractor for the purpose of outlining the objectives, performance, standards and basic engineering requirements for the refit (Alongside) of the CCGS TELEOST for the Canadian Coast Guard, Department of Fisheries and Oceans.

Intent of this specification shall describe the necessary work involved in carrying out the ship's Annual Refit Repairs. All work specified herein and all repairs, inspections and renewals shall be carried out to the satisfaction of the Owner's Representative and where applicable, the attending Transport Canada Marine Safety Inspector (TCMS). Unless otherwise specifically stated, the Owner's Representative is the Chief Engineer.
Refit to start January 9 and end February 20, 2013.

2. MANUFACTURER'S RECOMMENDATIONS

The overhaul and installation of all machinery and equipment specified herein shall be as per 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 three typewritten copies shall be presented to the Owner's Representative and attending Surveyors in a timely manner.

4. WORKMANSHIP

The contractor shall use fully qualified, certified and competent tradesmen and supervision to ensure a uniform high level of workmanship as judged by normally accepted shipbuilding standards and to the Owner's satisfaction.

5. FACILITIES

Quotation is to include all the necessary parts, labor and equipment required for the erection of access staging, rigging, lighting, necessary cranage, transportation and line handling. During the entire Refit, the Contractor will maintain in a state of good order all walkways, scaffolding, ladders guardrails and similar appliances that are necessary for the safety of persons working or on business in the areas where work is in progress.

6. MATERIALS AND SUBSTITUTIONS

All material shall be supplied by the contractor and all materials shall be new and unused unless otherwise specified. 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 in advance of utilization.

7. TOOLS

The Contractor is to supply all of the tools required to do the work except for certain specialty tools which will be issued to the Contractor and which must be returned in good order to the Chief Engineer. In all other instances, ship's tools are not to be used by the Contractor.

8. 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.

9. EXPOSURE AND PROTECTION OF EQUIPMENT

The contractor shall provide adequate 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 as per the manufacturer's instructions. The contractor shall cover all deck machinery and openings into the ship to prevent ingress of grit from blasting. The contractor shall remove any and all coverings after the coating operations are complete.

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 and all oil and water residue, which accumulates in the machinery space bilges as a result of any repair work detailed in this specification.

11. 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 safe working condition by the Contractor. It is to be removed on completion of the work. The Contractor can use the ship's electrical receptacles (if available) for 120 VAC power providing that they do not overload circuits, use electrical equipment that is functioning properly and they do not impede the work of the ship's crew.

12. ASBESTOS

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

13. ENTRY INTO ENCLOSED SPACES - CHEMIST'S CERTIFICATES

The Contractor shall be aware that the vessel is considered to be a Federal Work Place and thereby regulated by the Canada Labor Code.

In addition, the Contractor is required to keep a log of all personnel entering and leaving any enclosed space / vessel.

The Contractor shall supply the Owner's Representative with Marine Chemist's certificates or a Qualified Person in accordance with CCG/SSB TP 3177E before any cleaning, painting or hot work is commenced in confined spaces or machinery compartments. Certificates shall clearly state the type of work permitted and shall be renewed as required by regulations. Copies of the certificates shall be posted in conspicuous locations for the information of the Ship's and Contractor's personnel.

The Contractor shall ensure that any work carried out in confined spaces as defined by the Canada Labor Code must comply fully with all provisions of the code and follow the Coast Guard Fleet Safety Manual Confined space entry 7.D.9 and 7.D.9 (N) Version 3 dated November 24, 2006.

14. HOTWORK

Any item of work, involving the use of heat including welding, cutting, arc gouging in its execution, requires that the Contractor advise the Owner's Representative prior to starting such heating and upon its completion. The Contractor shall be responsible for maintaining a competent and properly equipped fire watch during, and for one full hour after, all hot work. The fire watch shall be arranged such that all sides of surfaces being worked on are visible and accessible. The Contractor shall provide sufficient suitable fire extinguishers and a fire watch during any such heating and until the work has cooled.
Ship's extinguishers are not to be used except in the event of an emergency. The Chief Engineer shall be notified immediately should an incident of this nature occur.
All Hot Work shall be completed in accordance with Coast Guard Fleet Safety Manual Section 7.D.11 and 7.D.11 (N).

15. LOCKOUT AND TAGOUT PROCEDURES

The Contractor shall be responsible to protect persons working on board the vessel while working on or near shipboard systems and equipment from accidental exposure to:
- Electrical currents
- Hydraulic
- Pneumatic
- Gas or stem pressure and vacuum
- High temperatures
- Cryogenic temperatures
- Radio frequency emissions
- Potentially reactive chemicals
- Stored mechanical energy
- Equipment actuation

The contractor, under the supervision of the Chief Engineer and his delegate, shall be responsible for the Lockout and Tagout of equipment and systems as listed in the specification.
The Contractor shall supply and install all locks and tags and shall complete the Lockout Tagout Log sheet provided by the Vessel.
The Contractor shall remove all locks and tags and complete the Lockout Tagout Log sheet provided by the Vessel.

16. PAINTING

All new and disturbed steel work that will not be on the underwater wetted surface of the ship's hull is to be protected with two (2) coats of primer. Unless otherwise stated in the Individual Specification item the primer shall be International Paints Interplate Zinc Silicate NQA262/NQA026 red. The paint shall be applied as per the Manufacturer's Instructions on their product data sheet.

The contractor shall strictly adhere to the manufacturer's instructions and will be supervised by a Coast Guard contracted National Association of Corrosion Engineers (Nace) Inspector in the preparation, application and curing of all coatings during this refit.

17. WELDING

Welding shall be in accordance with the Canadian Coast Guard Welding Specifications for Ferrous Materials, Revision 4. (TP6151 E)
The Contractor shall be currently certified by the Canadian Welding Bureau (CWB) in accordance with CWB 47.1 latest revision Division I, II or III at the time of bid closing.
The Contractor shall provide a current letter of validation from the CWB indicating compliance with standard CSA W47.1, Division I, II or III. (latest revision)
The Contractor may be required to provide approved procedure data sheets for each type of joint and welding position that will be involved in this refit.
The Contractor may be required to supply a current Welders Ticket for each individual welder that will be involved in this refit.

18. SMOKING

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

19. RESTRICTED AREAS

The following areas are out of bounds to Contractor personnel except to perform work as required by the specifications: all cabins, offices, Wheelhouse, Control Room, Engineer's office, public washrooms, cafeteria, dining room and lounge areas.

20. 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.

21. 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 be updated using freehand. Prints and reproductions that a contractor is required to provide shall be made on one piece of paper.

22. FIRE DETECTION AND SUPPRESSION SYSTEM

If any Specification Item will require disturbing, removing or isolating any heat or smoke sensors the Contractor will advise the Chief Engineer before work commences.

The Ship's Crew will perform any such work. The Contractor should note that failure to observe proper precautions while performing work of this nature could result in system malfunction and spontaneous discharge of FM-200, Halon or CO_2.

23. ANNEX

The Contractor shall have in place a Safety Management System that complies with the Canada Labor Code and Provincial Regulations and deals with the contractor responsibilities for items such as Hot Work, Confined Space Entry, Diving, Diving Operations, Lock out and Tagout procedures and Working Aloft.

The Contractor shall be aware that the vessel is considered to be a Federal Work Place and thereby regulated by the Canada Labor Code.
The Contractor shall comply with the work requirements as outlined in the Canada Labor Code and applicable Provincial Regulations.

In addition, the Contractor is required to keep a log of all personnel entering and leaving any enclosed space / vessel.

The Contractor shall note that Canadian Coast Guard Ships are presently working under the International Safety Management System (ISM) code and each ship has a Fleet Safety Manual on board. The fleet Safety Manual shall be adhered to when contract work involves CCG personnel and any other Public Service Employee during the contract period.
An electronic copy of the Fisheries and Oceans Canada, Canadian Coast Guard Fleet Safety Manual (DFO 5737) - (Adobe Acrobat .PDF version) can be found at
http://142.130.14.20/fleet-flotte/Safety/main_e.htm

24. SUSPENSION OF WORK

The Technical Authority reserves the right to suspend work immediately when that work is being performed in contravention of the Coast Guard's Safety Management System. Work shall be allowed to resume when the Technical Authority, in consultation with the Contractor and PWGSC, is satisfied that the agreed-upon procedures are in place and being adhered to.

25. REGULATORY AUTHORITY INSPECTIONS

The Contractor shall confirm a schedule of inspections with the regulatory authority (TCMS) for all work described in this specification and shall be responsible for calling them when inspections are required. NOTE: The Chief Engineer shall be notified of these inspection dates / times.

26. VESSEL SECURITY

There will be a Visitor's Log at each main vessel access. The Contractor shall ensure that all his employees and sub-contractor personnel sign-in when entering vessel and sign out when departing vessel. This requirement pertains to all visitors to the vessel including any Inspectors or Vendors. These Visitor's Logs will be available to the Contractor's Security Personnel in the event of any emergency.

27. WHMIS

Any WHMIS-controlled products used onboard shall be accompanied by a current MSDS; any neutralizing chemicals or specialized protective equipment required shall be provided by the Contractor at all times these WHMIS-controlled products are onboard the vessel.

SHIP'S PARTICULARS

Length O.A. 63.00 M
Length B.P. 55.70 M
Breadth Moulded 14.20 M
Depth Moulded Lower Deck 6.200 M
Depth Moulded Main Deck 8.900 M
Depth Moulded Upper Deck 11.400 M
Depth Moulded Boat Deck 13.900 M
Summer Draft 5.610 M
Frame Spacing 600 mm
Accommodations 36 persons

Class DNV +1A1 MC EO ICE 1A∗

Vessel Type Fisheries Survey /Research

Part 1: SCOPE:

1.1 The intent of this specification shall enable the owner's representatives an accurate time line on production and completion dates for Coast Guard Operational services.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 N/A

2.2 Standards

2.2.1 N/A

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

2.4.1 N/A

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 The successful Contractor shall supply three (3) copies of a detailed bar chart showing the planned work schedule for the ship's refit. This bar chart shall show each specification item, the planned and actual start date, the duration and the completion date.

3.1.2 A critical path of work shall be identified, which shows the critical tasks that may delay the completion of the refit and if they shall not be completed within the estimated time frame. The critical path may exist due to labor constraints or tasks which cannot be completed concurrently with other tasks.

3.1.3 If work arises that affects the critical path, it shall be immediately brought to the attention of the Chief Engineer. Every effort shall be made to prevent the vessel from delay in completing the refit in the time provided. Regular QA procedures shall apply

3.1.4 The bar chart shall be updated weekly and for each production meeting to reflect all changes to the actual production of the refit and changes to the anticipated completion dates of each individual item. The Contractor shall include on the updates to the production chart any work arising from PWGSC 1379 action that indicates the additional work shall impact the completion schedule for the vessel.

3.1.5 Three (3) copies of the weekly update shall be given to the Chief Engineer each week.

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

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

4.2 Testing

4.2.1 N/A

4.3 Certification

4.3.1 N/A

Part 5: DELIVERABLES:

5.1 Three copies of the original and three copies of each weekly update shall be given to the Chief Engineer one day prior to each weekly progress meeting.

5.2 The bar chart shall be updated weekly or for each production meeting to reflect the actual production on the refit and changes to the anticipated completion dates of each individual item. The contractor shall include on the updates to the production chart any Work Arising from PWGS 1379 action, and indicate how the additional work shall impact the completion schedule for the vessel.

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to supply and connect as specified, the necessary services to the vessel at the start of refit and to disconnect the same services at the completion of the repairs.

1.2 This work shall be carried out in conjunction with the entire refit period under the supervision of the Chief Engineer. The contractor shall supply all material and tools to the point of connection and quote on the cost of each individual service.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Date

2.1.1 General Arrangements

2.2 Standards

2.2.1 All connections made to the ship and terminations made must be performed in a manner to not cause any hazards or safety concerns to the personnel staying and working onboard.

2.3 Regulations

2.3.1 All electrical and plumbing connections to the ship must be done so in accordance with local and federal regulations, including those stated in the Canada Shipping Act and Transport Canada Regulations. The contractor shall ensure any / all connections are secure and that no pollutants are released from the ship.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 The Contractor shall include the cost to remove and dispose of thirty thousand liters of oily water mixture and oil from engine sumps, sludge tanks, bilges, and fuel tanks to be cleaned. The Contractor must provide a quote per cubic meter for the removal of the oil water mixture to be adjusted up or down by PWGSC 1379 action.

3.2 Location

3.2.1 N/A

3.3 Interferences

3.3.1 N/A

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

4.1.2. All work shall be completed to the satisfaction of the Chief Engineer and TCMS Inspector.

4.1.3. After the refit is finished, the contractor shall supply sufficient dock trials and sea trials to prove that all specification items that were worked on are operating properly and to the satisfaction of the Chief Engineer & TCMS.

4.1.4. Trials shall consist of ahead and astern movements at various power levels.

4.1.5. The contractor must have sufficient supervisory staff onboard to witness the operation of all machinery worked on during the refit and should quote on 8 hour trials.

4.2 Testing

4.2.1 N/A

4.3 Certification

4.3.1 N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.2.1 Contractor must supply the receipts from the waste management company for the amounts removed**.** These amounts will be adjusted up or down by PWGS 1379.

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to open up and clean the upper and lower HVAC ventilation systems on the vessel. The duct work from the dryer exhaust must also be thoroughly cleaned, including the lint box fitted directly in the laundry room. All sanitary exhaust duct work must be cleaned of lint and debris from all the washrooms, and discharge duct work to outside of the ship. The contractor shall verify the operation of all isolating valves, free up and lubricate. Valves are located in the upper and lower HVAC rooms.

1.2 All deficiencies shall be reported to the Chief Engineer as soon as they are found.

1.3 The contractor shall report to the Chief Engineer prior to any work commencing on this item, to ensure proper isolation of electrical fans and scheduling of different areas.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 Reference drawing 4192 – 2112. O.M.S. Ventilation diagram

2.2 Standards

2.2.1 The Contractor shall ensure that all inspection covers, access plugs, and diffusers that were removed for cleaning, are properly re-installed once the cleaning is complete. There shall be no plastic plugs installed and patches/plugs are to be made of metal of the same or heavier schedule as the duct work the patch is applied to. Ships ISM, Hot-work, Confined Space, Fall Protection, and Lock-out procedures must be followed.

2.3 Regulations

2.3.1. The cleaning, reinstallation, and any work on the duct work system must be in accordance with TCMS regulations and the Canada Shipping Act regarding ventilation systems onboard ships as well as TCMS TP127E.

2.4 Owner Furnished Equipment

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

2.4.2. The contractor must include an allowance of $2,000.00 to be adjusted up or down by PWGSC 1379 action for the repairing of damaged dampers and sealing leaks.

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1. The contractor shall ensure ventilation fans are locked and tagged out prior to commencing work on any system. Once it is safe to do so, the ventilation system shall be opened up and thoroughly cleaned.

3.1.2 The contractor shall open and thoroughly clean the lower HVAC distribution box and all of the ducting internally from the distribution box to the diffusers in all of the spaces. The contractor shall also internally clean all of the intake ducting to the distribution box.

3.1.3 The contractor shall open and thoroughly clean the upper HVAC distribution box and all of the ducting internally from the distribution box to the diffusers in all of the spaces. The contractor shall also internally clean all of the intake ducting to the distribution box.

3.1.4 The contractor shall clean the internal duct work for the laundry room dryer exhaust from the laundry room to the goose neck exhaust on the bow, on the port side. The lint trap must be opened, thoroughly cleaned, and put back in good working order.

3.1.5 The contractor shall isolate and thoroughly clean the sanitary ventilation system commencing in all the washrooms, leading to the exhaust fan, and the discharge duct work from the exhaust fan to the outside of the ship. All the diffusers in the washrooms are to be thoroughly cleaned and disinfected prior to re-installation.

3.2 Location

3.2.1. The lower HVAC unit is situated on the lower deck between frames 42-47, on the port side.

3.2.2. The upper HVAC unit is situated on the boat deck between frames 49-56 on the starboard side.

3.2.3. The laundry room is situated on the lower deck between frames 71-78, on the port side. The dryer exhaust vent is situated on the bow, on the port side, between frames 80-85.

3.2.4. The sanitary exhaust fan is located on the boat deck between frames 49-56, on the starboard side.

3.3 Interferences

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

4.2.1 After the work has been inspected by the Owner's Representative, the contractor shall close up all systems and test for leaks. All leaks shall be repaired by the contractor at the contractor's expense.

4.2.2 The contractor shall check the operation of all isolating valves (8 only), free up and lubricate. These Valves are located in the upper and lower HVAC rooms.

4.3 Certification

4.3.1 N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 3 copies of a detailed work report in electronic format shall be delivered to the Owner's Representative, indicating the condition of the ductwork in the beginning, the work performed and the condition after completion of this work item.

5.2 Training

5.2.1 N/A

5.4 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to conduct the annual maintenance, cleaning and inspect the sewage vacuum tank.

1.2 This work shall be carried out between 2000 hrs and 0600 hrs as there will be personnel living onboard of the vessel during the refit period. The contractor shall report to the Chief Engineer prior to any work commencing with this item.

1.3 This work shall be carried out in conjunction with H-5 Sewage Treatment Tank Cleaning & Inspection, but shall be completed first.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 Tank Capacity Plan

2.2 Standards

2.2.1 Ships ISM Hot-Work, Confined Space Entry, Fall Protection Procedures must be followed.

2.3 Regulations

2.3.1. The tank shall be gas freed before entering. The tanks must be certified as safe to enter. The tank is a confined space and all necessary precautions must be adhered to.

2.3.2. The contractor shall be responsible for the removal and disposal of residual sewage dirt/debris from cleaning the inside of the tank. It must be done in accordance with the local regulations.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1. The contractor shall consult with the Chief Engineer and shall lock out the system electrically (vacuum/transfer pumps) and all supply /discharge valves in and out of the tank as indicated in the ISM Lockout Procedures. The contractor must remove 3.66 M^3 of sewage from the vacuum tank.

3.1.2. The contractor shall remove two manhole covers and gaskets from the tank. The sealing surfaces shall be cleaned on the cover and the tank's threaded studs shall be cleaned from paint and rust.

3.1.3. The contractor shall gas free the tank and maintain gas free status throughout the cleaning and inspecting process. The contractor shall thoroughly clean the internals of the tank with a high pressure water spray of not less than 2000 psi. All debris and contaminated water from the cleaning process shall be removed and properly disposed of by the contractor and included in the bid price.

3.1.4. The contractor shall remove the three float switches, clean them, prove they are fully operational and then re-install using contractor supplied new gaskets. The contractor shall thoroughly clean the holes where the float switches are inserted and removed. The floats are to be viewed by the Chief Engineer or his designate prior to re-installation, to prove functional.

3.1.5. Bare, rusty, and loose paint scale areas are to be cleaned with a wire brush to bare metal and all debris from this process must be disposed of by the contractor.

3.1.6. Once the tank is prepared, it is to be viewed by the Chief Engineer or his designate.

3.1.7. The contractor shall quote on 5 square meters and include in their quote the cost per square meter to be adjusted up or down by PWGSC 1379 action for cleaning bare, rusty, and loose scale from the tank. The total area shall be agreed upon by the Contractor and Chief Engineer.

3.1.8. This specification should be performed in the evening or night watch, 2000 hrs. to 0600 hrs. to have minimal impact on the crew onboard.

3.1.9. The contractor shall supply one portable toilet on the trawl deck for the period of time that the sewage system will be down.

3.1.10. The contractor shall close up the tank using contractor supplied fasteners and a new neoprene gaskets of 3/16" thick. The studs shall be coated with anti-seize compound.

3.2 Location

3.2.1. The sewage vacuum tank is situated in the bow thruster compartment at frame 82-83.

3.3 Interferences

3.3.1. Contractor is responsible for the identification of all 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

4.2.1 Once all work has been completed and the tank is closed up, the system shall be put back into service again. Automatic operation of the floats will require testing to prove the system is fully functional.

4.3 Certification

4.3.1 N/A

Part 5: DELIVERABLES:

5.2 Drawings/Reports

5.1.1 The contractor shall be responsible for providing three (3) copies of a detailed work report in electronic format on the condition of the tank prior to work, the work that was performed, and the condition as left.

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to conduct the annual maintenance and cleaning of the ship's sewage treatment tank. The contractor shall remove 4 inserts with all the old studs from the four manholes, fabricate and install 4 new inserts in the tank with the same number of studs, and fabricate and install 4 new manhole covers for the tank.

1.2 The contractor shall report to the Chief Engineer prior to any work commencing with this item. This work shall be carried out in conjunction with H-4 Sewage Vacuum Tank Cleaning and Inspection.

1.3 The Sewage Vacuum Tank shall be completed first and then used as a holding tank while this specification is being carried out.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1. Hamworthy Treatment Unit 6.1 M^3 Tank. Model ST-6A.

2.2 Standards

2.2.1. The tanks shall be locked out and tagged out by Owner's Representative prior to work commencing.

2.3 Regulations

2.3.1. The tank shall be gas freed before entering. The tanks must be certified as safe to enter.

2.3.2. The tanks are confined spaces and all necessary precautions must be adhered to. Ships ISM Hot-Work, Confined Space, Fall Protection, and Lockout Procedures must be followed.

2.3.3. Welding shall be in accordance with the Canadian Coast Guard Welding Specifications for ferrous Materials, Rev. 4 (TP6151E).

2.3.4. Any and all wastes, residual sewage, dirt, and debris shall be removed from the tanks and properly disposed of in accordance with the local regulations and shall be the responsibility of the contractor.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1. The contractor shall inform the Chief Engineer prior to commencing any work. The ship's staff shall isolate and lock out the system electrically and change over/lock out all associated valves.

3.1.2. The tank consists of three compartments they shall be pumped out by the contractor. There shall be 6100 liters of sewage remaining in the tank to be pumped out.

3.1.3. The contractor shall pump out the vacuum tank on a daily basis while the sewage treatment tank is being serviced. The contractor shall install a full flow isolation valve and quick coupling on the lower manhole cover of the vacuum tank for easy connection and pumping of the vacuum tank

3.1.4. The contractor shall supply a unit cost per 1000 liters of sewage removal and disposal and include in t heir quote the requirement for a vacuum truck for 5 pump outs (Vacuum Tank) with a unit cost per pump out. This shall be adjusted up or down by PWGSC 1379 action.

3.1.5. The contractor shall disconnect electrically and remove the float and alarm sensors from the tank and protect from damage while the tank is being cleaned and inspected.

3.1.6. The contractor shall remove all four (4) manhole covers and gaskets from the tank to gain access to the tank compartments. The internals of all components including piping, screens, and overflows must be cleaned thoroughly with high pressure water spray of no less than 2000 psi and a stiff brush (not wire). All debris and waste water from cleaning shall then be removed and properly disposed of by the contractor and included in the bid price.

3.1.7. All the aeration lines/hose from the compressor to the diffusers shall be removed and cleaned and blown through with compressed air to prove clear and any deficiencies reported to the Chief Engineer as soon as found. The 24 diffusers must be removed, checked, and replaced as required and new diffusers will be supplied by the owner.

3.1.8. The contractor shall quote on removing an insert with the old studs from the four holes in the tank, fabricating new inserts complete with 18 only ½" X 1" studs in each ring, and welding these in the tank. The inserts shall be 3/8" thick and made of steel the same dimensions as per original as the covers 23" X 17"outside and 18" x 12" inside. The contractor shall quote on fabricating new manhole covers (23" X 17" X ¼" thick steel) with new 3/16" rubber gaskets and new nuts and washers on all studs. The manhole covers shall be fitted with 2 only handles same as original to facilitate removal and installation.

3.1.9. The contractor shall prime the heat affected areas and apply two coats of epoxy on the new metal.

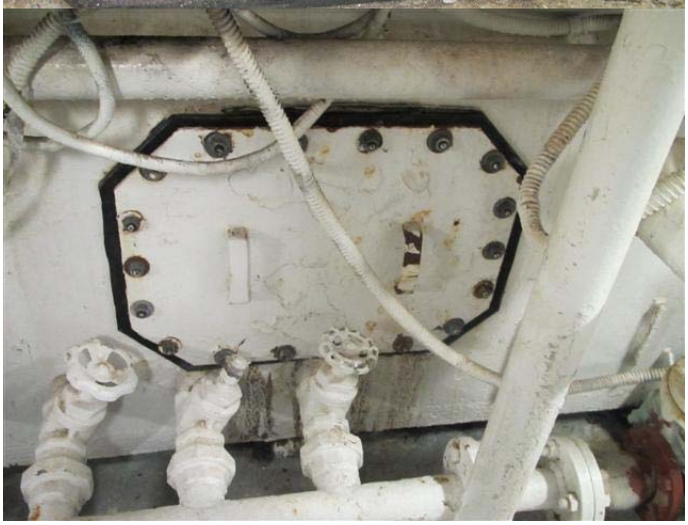
3.1.10. The contractor shall solvent wash bare areas inside the tank in preparation for coating. The contractor shall apply a high grade of coal tar epoxy or equivalent and include in their quote 3 M^2 of bare area, with a cost per square meter to be adjusted up or down by PWGSC 1379 action.

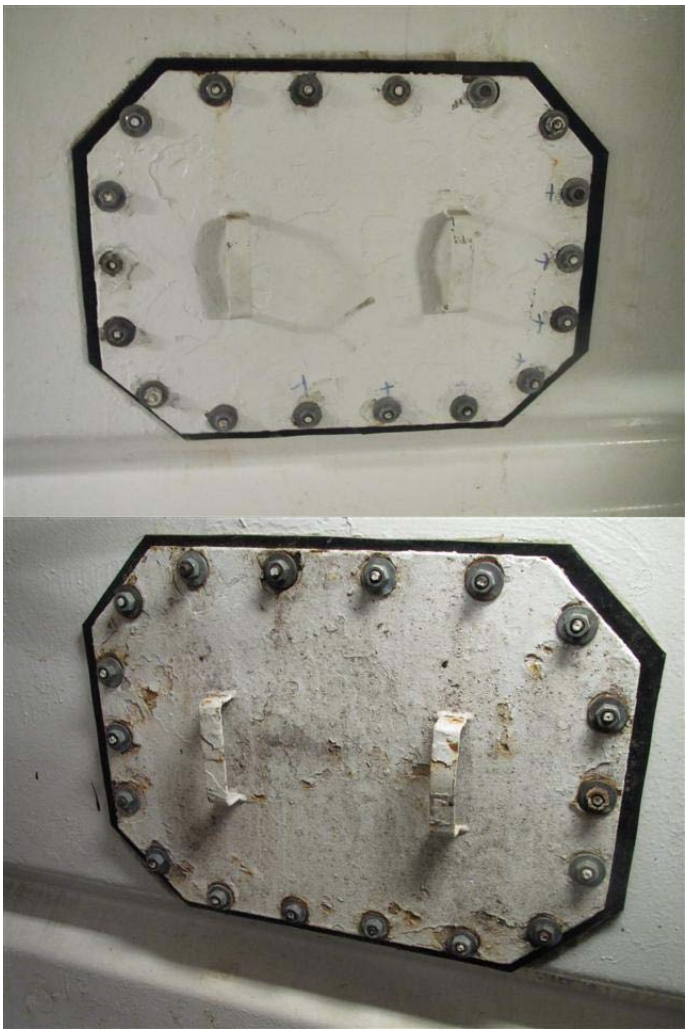
3.1.11. The coating shall be applied according to the manufacturer's specifications.

3.1.12. Prior to the contractor closing the tank, the Chief Engineer shall inspect all components of the tank.

3.1.13. The contractor shall assemble all piping and install as per original condition, after the Chief Engineer completes the inspection. Manhole covers shall be replaced with new 3/16" thick neoprene gaskets with the center gasket material cut out. The float and alarm sensors shall be electrically re-connected, and replaced as per original condition. These shall be tested by the contractor and witnessed by the Chief Engineer to ensure proper operation.

3.1.14.





3.2 Location

3.2.1. Sewage treatment plant is located on the upper deck windlass compartment, between frames 86.5-90, on the port side.

3.3 Interferences

3.3.1. The Contractor shall be responsible for the identification of all 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

4.2.1 The tank shall be filled with water to test for leaks, put into automatic operation, and witnessed by the Chief Engineer.

4.3 Certification

4.3.1 N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The contractor shall provide three (3) copies of a detailed work report in electronic format on the condition of the tank prior to work, the work that was performed, and the condition as left.

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to have an annual inspection carried out by an FSR from the manufacturer- Schat Harding. The contractor must also replace all the fasteners securing the Miranda davit to the ship and in the various sections. The bolts and nuts shall be supplied by the owner. There are a total of 60 only 5/8" bolts and nuts to remove and replace. The contractor must also replace the keeper plates and bolts securing the pins in the sheaves. There are 10 such plates and shall be owner supplied.

1.2 The contractor must also replace the hydraulic hoses as determined by the FSR. The contractor shall have an allowance of $5000.00 for the replacement of hoses in the price bid to be adjusted up or down by PWGSC 1379 action.

1.3 Since the Miranda Davit is part of the vessels life saving equipment it falls under the LSE Regulations and therefore must be inspected annually by a FSR, following the manufacturer's recommendations for annual inspection.

1.4 The contractor shall report to the Chief Engineer prior to any work commencing with this item.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 Davit Type –Miranda MRT 3900, Schat-Harding Reference 203903-1/CE695
2.1.2 Winch Type- BHY 5300
2.1.3 Manual 116 stored in the Engineer's Office onboard the CCGS Teleost.

2.2 Standards

2.2.1 All inspections and work performed on this piece of equipment shall be completed to the highest standards regarding this essential Life Saving Equipment.
2.2.2 The Contractor must adhere to the Ships ISM Hot-work, Confined Space, Fall protection, and Lockout procedures.

2.3 Regulations

2.3.1. The regulations in the Canada Shipping Act pertaining to the inspection and maintaining of Life Saving Equipment must be strictly adhered to and passed by the attending TCMS Surveyor.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1. The contractor shall include in their bid for the services of a Schat FSR to perform the following annual maintenance:
3.1.2. The annual maintenance must be completed in accordance with SOLAS Chapter III, Regulation 20, Section 11.
3.1.3. The winch brakes, drive chain, and clutch must be serviced.
3.1.4. There shall be a visual inspection of the davit and winch foundations.
3.1.5. There shall be an audit of the davit and winch equipment.
3.1.6. The contractor must remove the fasteners on the miranda davit including the ones bolting the sections together and the ones securing the davit to the ship and install new, owner supplied fasteners in their place. Only one fastener must be replaced at a time to ensure the davits remain secure for the entire operation. There are a total of 60 only 5/8” bolts and nuts to replace according to the work report CE012/3067, issued by Schat Harding in February 2012.
3.1.7. The contractor must also remove the 10 old keeper plates and two bolts on each plate on each of the 10 sheaves and install the same number new plates and bolts and secure to each sheave. These bolts and keeper plates shall be owner supplied. This defect is also noted in the above work report from 2012.
3.1.8. The FSR must advise the Chief Engineer of any defects as soon as they are identified.
3.1.9. There has to be a visual check on the condition of the lifeboat lifting foundations.
3.1.10. The FSR shall train the crew to show operation and general maintenance required on the equipment.
3.1.11. The FSR shall issue certification to show that the lifeboat and davits are in compliance with the SOLAS Regulation.

3.2 Location

3.2.1. The Miranda Davit is located on the Upper Deck, on the port side between frames 31 and 43.

3.3 Interferences

3.3.1. The contractor shall be responsible for the identification of all interference items, their temporary removal, storage, and refitting to the 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

4.2.1 The operation of the Davits shall be tested including boat launch with manual brake to the satisfaction of the FSR and witnessed by the Chief Engineer and Chief Officer.

4.3 Certification

4.3.1 Certificate indicating compliance must be provided to the Chief Officer, Chief Engineer, and TCMS Inspector.

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The FSR must provide 3 copies of a detailed work report in electronic format to the Chief Engineer, on the condition of the appliance as found and the work performed on the system.

5.2 Training

5.1.1 The FSR must explain and demonstrate to the crew the proper procedures when operating this davit, and to explain where additional attention should be give in maintaining this appliance. The FSR should also advise on any mistakes currently being done by the crew in regards to operation or maintenance.

5.3 Manuals

5.3.1 N/A

5.4 Spares

5.4.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to have the annual maintenance for the galley exhaust ventilation completed (opened and cleaned).

1.2 This work shall be carried out in Conjunction with the operation of the galley and to have the item completed during a time to minimize the disruption in the galley. This time shall be between 1900 to 0400 hrs.

1.3 The contractor shall report to the Chief Engineer prior to any work commencing with this item.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1. Drawing MSL-4192-2112 O.M.S. Ventilation Drawing
2.1.2. Drawing 1-137-571-813 Galley Arrangement

2.2 Standards

2.3.1 The galley ventilation can be a source for fire hazards and has to be cleaned in such a manner as to keep the possibility to a minimum. The contractor must adhere to the Ships ISM Hot-work, Confined Space, Fall protection, and Lockout procedures.

2.2 Regulations

2.3.2 The cleaning practice used must be an approved method, and the waste must be disposed of in accordance to local regulations.

2.3 Owner Furnished Equipment

2.4.1. The contractor shall supply all materials, equipment, labor, 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 all the necessary ducting, access panels, and ventilators to properly clean the exhaust and ventilating systems.

3.1.2. The contractor shall open up and steam clean the exhaust ventilation trunking between the deck ventilator on the boat deck and the galley exhaust hood. The contractor shall remove the three (3) grease filters and thoroughly clean the interior of the exhaust hood in the galley. The deck ventilator shall be steam cleaned.

3.1.3. The contractor shall make every reasonable effort to minimize the disruption in the galley while performing this item. The contractor shall thoroughly clean and sanitize the galley after the work has been completed and inspected by the Chief Engineer. The contractor shall make effort to complete this specification as soon as possible.

3.1.4. The contractor shall use a video camera to visually inspect the trunking after the cleaning is complete. Copy of CD shall be given to the Chief Engineer.

3.1.5. The contractor shall re-assemble all the components in good working order.

3.2 Location

3.2.1. This system is located on the upper deck in the galley area, and the boat deck on the port side between frames 48 and 75.

3.3 Interferences

3.3.1. Contractor shall be responsible for the identification of all 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, TCMS and local Fire and Safety Authorities.

4.2 Testing

4.2.1 The ventilation system will be tested after all work is completed to verify correct operation.

4.3 Certification

4.3.1 N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The contractor shall supply the Chief Engineer with three (3) copies of a detailed work report in electronic format identifying the condition of the system before, the work that was performed, copy of CD with video of cleaned trunking, and the condition as left.

5.1 Training

5.2.1 N/A

5.2 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to have the fixed fire fighting systems serviced and re-certified for use on the CCGS Teleost, and credited by TCMS.

1.2 The Contractor shall report to the Chief Engineer prior to any work commencing with this item. This work shall be carried out in conjunction with the servicing of the portable fire extinguishers, in a manner that does not compromise the ability to extinguish a shipboard fire.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 N/A

2.2 Standards

2.3.1. The contractor must be approved by TC to recertify these systems and must be done so in accordance with the latest TC regulations concerning marine safety. The system was installed and commissioned by "National and Marine Fire Services Corp".

2.3.2. The Contractor must adhere to the Ships ISM Hot-work, Confined Space Entry, Fall Protection and Lockout procedures.

2.3 Regulations

2.3.3. All the systems must be labeled as being certified to use, the date, and company's name.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1. The contractor shall provide an authorized representative to perform the tests and inspections of the vessel's FM 200, Wet Chemical, and CO2 smothering systems for annual safety inspection and certification. The Chief Engineer and TCMS Inspector must witness all tests.

3.1.2. The contractor shall complete the following tests, as well as any other tests requested by the attending marine surveyor. The contractor shall include in their quote on the cost of testing of alarms (lights and sirens) on all units, testing of all of the Nitrogen start cylinders, testing of the ventilation shut downs, testing of the releasing loops, and pull cables.

3.1.3. The contractor shall blow through all piping and pneumatic actuator and prove that they are operational. All piping and nozzles are to be proven clear and free.

3.1.4. The contractor shall prove operational all alarm displays and sirens. The contractor shall weigh all bottles and the weight shall be recorded. The contractor shall provide the Chief Engineer with all certificates upon completion of the refit, in duplicate.

3.1.5. Once all the testing and inspections are completed, the systems must be re-assembled and put back into operation by the Contractor.

3.2 Location

3.2.1

FM 200 & CO2 - FIXED FIRE SYSTEM

Location	Area Protected	Serial No.	Due Date	Weight	Type
Upper Deck					
Galley	Range Hood	DOT4BW250	02/11	10.0 Kg	WET CHEMICAL
Lower Deck					
Domestic Pump Room	Emerg. Gen. Compt.	AA405784	02/11	47.9 Kg	FM 200
Domestic Pump Room	Emerg. Gen. Compt.	KF 105885AA	02/11	8.4 mL	NITROGEN
Domestic Pump Room	Emerg. Gen. Compt.	KF 105890AA	02/11	8.4 mL	NITROGEN
Domestic Pump Room	Emerg. Gen. Compt.	KF 101449AA	02/11	8.4 mL	NITROGEN
Lower Deck					
Net Loft	Port Exhaust Stack	AA404149	02/11	32.5 Kg	FM 200
Net Loft	Port Exhaust Stack	AA404761	02/11	32.5 Kg	FM 200
Net Loft	Engine Room	AA4011996	02/11	91.8 Kg	FM 200
Net Loft	Engine Room	AA4011990	02/11	91.8 Kg	FM 200
Net Loft	Engine Room	AA4011991	02/11	91.1 Kg	FM 200
Net Loft	Engine Room	KF 117543AA	02/11	344 mL	NITROGEN
Net Loft	Engine Room	KF 117563AA	02/11	344 mL	NITROGEN
Net Loft	Engine Room	KF 117555AA	02/11	344 mL	NITROGEN
Net Loft	Port Exhaust Stack	KF88003AA	02/11	94.7 mL	NITROGEN
Net Loft	Port Exhaust Stack	KF101990AA	02/11	8.4 mL	NITROGEN

Net Loft	Port Exhaust Stack	104760	02/11	8.4 mL	FM 200
Main Deck					
Main Deck	Paint Locker	520-237	02/11	20 LB	CO2

3.3 Interferences

3.3.1. Contractor is responsible for the identification of all 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 and TCMS Inspector. The Chief Engineer and TCMS Surveyor shall be present during the Inspection and testing of the FM-200 system..

4.2 Testing

4.1.2. 4.2.1 The Chief Engineer, TCMS Inspector, and PWGS Inspector he shall be present during the inspection and testing the FM 200 system.

4.3 Certification

4.3.1 Certificates for all systems shall be handed to the Chief Engineer.

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The contractor shall provide three (3) copies of a detailed work report in electronic format on the condition of the systems when found, the work performed by the contractor, and the condition as left.

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to perform the annual inspection and certification of the ship's fire detection system.

1.2 The Contractor shall report to the Chief Engineer prior to any work commencing with this item. This work shall be carried out in conjunction with the FM-200 Service and Re-certification.

1.3 This work shall be completed and inspected to TCMS requirements.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1. Fire Alarm System is Notifier, model # NFS-3030

2.1.2. Drawing No. 4192-3210 Fire Detection and Alarm Wiring diagram

2.1.3. Drawing No. 4192-3211 Fire Detection System layout

2.2 Standards

2.2.1. The Ships ISM Hot-work, Confined Space, Fall protection, and Lockout procedures must be adhered to at all times.

2.3 Regulations

2.3.1. The contractor performing the work on this system shall be fully certified to do so and shall be recognized by TC to certify this system.

2.3.2. The testing of this equipment and the automatic functions must be witnessed by the Chief Engineer and TCMS Inspector.

2.3.3. The testing shall be in accordance to TCMS regulations, and regulations in the Canada Shipping Act pertaining to fire detection systems on ships and regulation CAN/ULC-S536, Inspection and Testing of Fire Alarm Systems.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1. The contractor shall obtain the services of a qualified technician to carry out the testing and inspection of this equipment.

3.1.2. The contractor shall provide the Chief Engineer with a copy of the Fire Alarm System Test and inspection report and a certificate of inspection upon the completion of the tests.

3.1.3. The contractor shall immediately bring to the attention of the Chief Engineer, any and all deficiencies found during the testing and inspection. The deficiencies shall be approved by the Chief Engineer prior to commencing repairs.

3.1.4. Once all testing is completed, the technician shall return the Fire Detection System back into operational status.

3.2 Location

3.2.1. The main fire detection panel is located on the bridge while a secondary panel is situated in the machinery control room.

3.3 Interferences

3.3.1. Contractor shall be responsible for the identification of all 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 and TCMS Inspector.

4.2 Testing

4.2.1 Testing of the system will be directed by and to the satisfaction of the Chief Engineer and TCMS Inspector.

4.2.2 The testing of this equipment and the automatic functions must be witnessed by the Chief Engineer and TCMS Inspector.

4.3 Certification

4.3.1 The contractor performing the work on this system shall be fully certified to do so and shall be recognized by TCMS to certify this system. The testing of this equipment and the automatic functions must be witnessed by the Chief Engineer and TCMS Inspector.

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The contractor shall give three (3) copies of detailed work reports in electronic format on the condition the system was found, the work performed, and the condition as left.

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to test the identified refrigeration systems onboard for leaks, certify the system as being leak free and indicate any deficiencies / repairs that shall be addressed by PWGSC 1379 action.

1.2 The Contractor shall report to the Chief Engineer prior to any work commencing with this item.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1. Berg HVAC air conditioning system for the lower deck, wet lab and machinery control room. Model # MCR-35-X, serial # W38040694, R-22.

2.1.2. Sabroe, controlled sea water temperature refrigeration system. Serial # 94011.2, R-22.

2.1.3. Scientific freezer. Sabroe Model # MC6-F26, serial # 94011.1, R-22.

2.1.4. Domestic refrigeration system #1 Bitzer Verdichter, type V, 332 049, R-22.

2.1.5. Domestic refrigeration system # 2 Bitzer Verdichter, type V, 25720211, R-22.

2.1.6. Technotherm HVAC system on the boat deck. Type F5, serial # AA08260-0L, R-22.

2.2 Standards

2.2.1. The contactor shall test the systems for leaks according to the standards for protecting the environment.

2.3 Regulations

2.3.1. All the regulations pertaining to the protection of the environment, Canada Shipping Act, and Coast Guard policies must be strictly followed concerning the release of any halocarbon.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1. The contractor shall notify the Chief Engineer when conducting the tests on each piece of equipment.

3.1.2. The contractor shall follow the lockout and tag out procedures of the vessel.

3.2 Location

3.2.1. The first three systems on the list are situated in the main engine room on the starboard side, between frames 26 and 34.

3.2.2. The Two (2) domestic refrigeration systems are in the windlass room, on the port side between frames 84 and 89, on the upper deck.

3.2.3. The final HVAC system is situated on the boat deck, on the starboard side, between frames 49 and 57.

3.3 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

4.1.1. The contractor shall complete all work to the satisfaction of the Chief Engineer.

4.1.2. The contractor shall apply tags to each piece of equipment stating that it has been leak tested, and suitable for use.

4.1.3. The refrigeration technician must possess a halocarbon certificate and number and sign the work performed in the Halocarbon Logbook, held by the Chief Engineer.

4.2 Testing

4.2.1 Each system will be tested to ensure proper operation by the refrigeration technician and witnessed by the Chief Engineer..

4.3 Certification

4.3.1 Refrigeration technician must possess a halocarbon certificate and provide his certificate number to be recorded in the log book.

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The contractor must supply three (3) copies of a detailed work report in electronic format on each refrigeration system. This report must include the condition of the system as found, all work performed on it, and the condition as left.

5.3 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to lower the bag lift block to the dock, transport it to a certified shop for over-haul, disassembly, inspection, testing, re-certification and report. Measurements shall be taken and recorded, and any noted defects shall be reported to the Chief Officer and then repaired by the contractor. The block must then be reassembled and reinstalled using a new Owner Supplied shackle.

1.2 The Contractor shall report to the Chief Engineer prior to any work commencing with this item. This work shall be carried out in conjunction with the operations of the deck crew.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1. 

2.2 Standards

2.2.1. The Ships ISM Hot-work, Confined Space, Fall Protection, and Lockout procedures must be adhered to.

2.2.2. The block shall be inspected, tested and re-certified in accordance with the cargo, fumigation, and tackle regulations.

2.3 Regulations

2.3.1. The block is contained in the vessel's tackle registry and must be certified safe as per the Canada Shipping Act Regulations pertaining to lifting equipment.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1. The crew shall remove the winch wire rope from the block. The contractor shall supply the services of a crane and basket lift to enable the removal and lowering of the block to the dock.

3.1.2. The block shall be unshackled and lowered to the dock.

3.1.3. The block shall be sent to a certified company for complete inspection & testing of the internal and external components, and witnessed by Chief Officer. (Block shall be load tested to 25 tonnes).

3.1.4. The contractor shall also provide the basket lift for the Chief Officer to inspect the securing pad on the "A" frame, looking for excessive wear on the metal pad eye.

3.1.5. If the pad eye is determined to be within tolerance, the block can be secured to the pad again with a new Owner Supplied shackle.

3.1.6. The contractor shall secure the shackle pin in a fashion to prevent loosening and backing out.

3.2 Location

3.3.2. The block is located on the aft "A" frame, in the center of the ship at frame 8.

3.3 Interferences

3.3.1. The Contractor shall be responsible for the identification of all 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 Officer and Chief Engineer.

4.2 Testing

4.2.1 The contractor shall perform operational testing on the block and wire once it is put back into place to ensure it is free and clear. The block shall be load tested to 25 tonnes.

4.3 Certification

4.3.1 The block is certified every five years but is not due for load certificate in 2013. A certificate shall be delivered to the Chief Officer once block is certified. The repairer shall be certified to overhaul such blocks.

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The contractor shall complete and deliver three (3) type written copies of a detailed work report in electronic format to the Chief Officer of work performed on the block. It must indicate the condition of the block and securing arrangement as found, all work performed on it and the condition it was left.

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to have the following tanks cleaned, inspected by TCMS, and air pressure tested for credits from TC: Water Ballast Tk, #4 DB F/O Port Tk, #7 F/O Port Day Tk & #7 F/O Stbd Sett Tk.

1.2 The water ballast tank shall be hydrostatically pressure tested and F/O tanks shall be air pressure tested. All tank testing shall be witnessed by the attending TC Surveyor.

1.3 The Contractor shall also overhaul the hydraulically operated valve in the ballast tank and pressure test for correct operation.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 Tank Capacity Plan MSL 4192-4100

2.2 Standards

2.2.1. The contractor must complete the specified work in a manner that is acceptable to the Chief Engineer and TCMS Inspector.

2.2.2. The Contractor must adhere to the Ships ISM Hot-work, Confined Space Entry, Fall Protection and Lockout procedures.

2.3 Regulations

2.3.1 . This ship is regulated by Transport Canada and all work performed must be approved and inspected by Transport Canada Marine Safety Inspector.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 There are a total of 4 tanks/spaces to be dealt within this specification.

3.1.2 The Contractor shall schedule the visit of Transport Canada when the tank/space is ready for inspection.

3.1.3 The contractor shall remove the manhole covers and gaskets from the tanks identified below. The sealing surfaces will be cleaned on the cover and the ship's tank side. The threaded studs shall be cleaned from rust and paint. Following the completion of the work, the covers will be fitted with new, contractor supplied 3/16" neoprene gaskets and the studs coated with moly cote and the nuts secured.

3.1.4 The ship's crew will pump the fuel oil and ballast storage tanks down to the suction levels. The Contractor shall remove and dispose of the remaining fuel oil in each of the 3 F/O storage tanks. The Contractor shall remove and dispose of the remaining ballast water from the ballast tank. The Contractor shall supply a quote for each cubic meter of fuel to be disposed of and the actual amount will be adjusted with PWGSC 1379 action.

3.1.5 The contractor shall certify/gas free all 4 tanks and thoroughly clean the internals of the 4 tanks. All cleaning equipment and waste water shall be collected and properly disposed of by the contractor.

3.1.6 Bare, rusty, and loose paint scale areas shall be cleaned with a wire brush to the bare metal and all debris from cleaning must be removed. Bare spots in the ballast tank shall be power tooled to SP11 and have the edges feathered. The Contractor shall provide a quote to power tool and paint the ballast tank for 25 square meters and provide a unit cost for additional square meters. This shall be adjusted up or down by PWGSC 1379 action.

3.1.7 The Contractor shall remove the ballast valve from the ballast tank, overhaul and pressure test it to 100 psi. The test shall be witnessed by the Chief Engineer and TCMS Inspector. The ballast valve is a three inch globe valve with a cast iron body, bronze trim, O.S.&Y., with a bolted bonnet and rising stem. The Contractor shall supply / install all broken gaskets with a suitable material for water and use new nuts and bolts to fasten in place.

3.1.8 Following the cleaning and removal of the rusty / loose pain scale from the areas, the Chief Engineer and TCMS Inspector will complete the tank inspection.

3.1.9 The Contractor shall apply two coats of moisture curing primer to the bare metal areas in the ballast tank. The Contractor shall adhere to manufacturer's instructions in applying the coating.

3.1.10 The Contractor shall check the pipe connections for the remote sounding bell housings to ensure they are tight. The floating valve in the housings shall be checked to ensure they are free.There are two such bell housings in each of the tanks.

3.1.11 The Contractor must ensure the tank transducers are kept free from debris and not damaged during the cleaning process. The transducers are extremely sensitive and should be protected at all times.

3.1.12 The vents **must** be removed from each of the tanks/spaces **prior** to any work commencing, opened, cleaned, and proven operational and inspected by the Chief Engineer and TCMS prior to securing back to the tank. The Contractor shall re-install the (proven correct operational) vent heads after tank testing is complete.

3.1.13 Once the tanks/spaces are accepted by TC, the tanks/spaces shall be air pressure or hydrostatically pressure tested by the Contractor and witnessed by TC for credit.

3.2 Location

3.2.1 Fore Peak W.B. Fr. 82-100, forward in the bow, accessed from the main deck and has a capacity of 59.86 cubic meters.

3.2.2 No. 4 D.B. P. F.O. Fr. 49-66, port side, accessed in net loft area and it has a capacity of 54.12 cubic meters.

3.2.3 No. 7 F.O. Day Tk. Port Fr. 07-10, accessed from engine room and it has a capacity of 21.42 cubic meters.

3.2.4 No. 7 F.O. Sett Tk. Stbd Fr. 07-10, accessed from the engine room and it has a capacity of 21.42 cubic meters.

3.3 Interferences

3.3.1 The contractor shall be responsible for the identification of all interference items, their removal, storage, and refitting to the vessel.

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

4.1.1 All work must be completed to the satisfaction of the Chief Engineer and TCMS Inspector.

4.2 Testing

4.2.1 The contractor shall be responsible for the air pressure or hydrostatic pressure testing of each of the tanks and witnessed by the attending TCMS Inspector and credits obtained from TC.

4.3 Certification

4.3.1 The Contractor shall certify/gas free all 4 tanks prior to entering the confined space.

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The Contractor shall provide three copies of a detailed work report in electronic format on the findings in all 4 tanks, the work and pressure tests performed, any leaks detected and repaired, and the condition of the 4 tanks as left.

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.1 The intention of this specification shall be to test the identified tanks, to be witnessed by the Chief Engineer & TCMS, and credits obtained.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 Tank Capacity Plan MSL 4192-4100

2.2 Standards

2.2.1. The Contractor must complete the specified work in a manner that is acceptable to the Chief Engineer and TCMS Inspector.

2.2.2. The Contractor must adhere to the Ships ISM Hot-work, Confined Space Entry, Fall Protection and Lockout procedures.

2.3 Regulations

2.3.1 . This ship is regulated by Transport Canada and all work performed must be approved and inspected by Transport Canada Marine Safety Inspector.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 There are a total of 4 tanks to be dealt with in this specification.

3.1.2 The Contractor shall schedule the visit of Transport Canada when the tank/space is ready for either hydrostatic or air pressure test.

3.1.3 Fuel and oil tanks are normally pressure tested with compressed air to about 2 psi. Water tanks can be hydrostatically pressure tested by filling with water and allowing the water to overflow the vent on deck. **The contractor shall supply and connect the manometer to determine the pressure in the tank.** The Contractor shall install balloons into the tank vents and sounding pipes to perform the tests.

3.1.4 The Contractor shall be responsible for installing blanks in the remote sounding air tubes located in the engine room to prevent leakage into the control panels while the test is being performed. The Contractor must protect the tank transducers from damage when applying the pressure test and remove the protective cover once the test is complete. The Contractor shall be responsible for removing all fitted plugs and proving the vents are free and clear once the pressure test is completed.

3.2 Location

3.2.1 Fore Peak W.B. Fr. 82-100, forward in the bow, accessed from the main deck and has a capacity of 59.86 cubic meters.

3.2.2 No. 4 D.B. P. F.O. Fr. 49-66, port side, accessed in net loft area and it has a capacity of 54.12 cubic meters.

3.2.3 No. 7 F.O. Day Tk. Port Fr. 07-10, accessed from engine room and it has a capacity of 21.42 cubic meters.
No. 7 F.O. Sett Tk. Stbd Fr. 07-10, accessed from the engine room and it has a capacity of 21.42 cubic meters

3.3 Interferences

3.3.1 The contractor shall be responsible for the identification of all interference items to complete this task, their removal, storage, and refitting to the vessel.

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

4.1.1 All the work must be completed to the satisfaction of the Chief Engineer and TCMS Inspector.

4.2 Testing

4.2.1 The contractor shall be responsible for pressure testing each of these tanks (air & hydrostatically)and coordinating the attending TCMS Inspector to witness and obtain credit from TC.

4.3 Certification

4.3.1 N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The Contractor shall provide three copies of a detailed report in electronic format to the Chief Engineer after testing and crediting by the TCMS Inspector..

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be for the Contractor to remove this boom from the ship, transport it to the hydraulic shop, reseal the boom, re-chrome the rams, re-install back onto the ship, and load test and certify it for Transport Canada.

1.2 The Contractor shall arrange the crane required to lift the boom off and on to the ship, and install caps and plugs to the ends of the hydraulic lines for the duration the boom is ashore.

1.3 The Contractor shall supply the 3175 kg certified weight, certified load cell, and provide a copy of the certificates to Transport Canada for the load test.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 This telescopic boom is fitted to the starboard side of the ship and has to be removed through the starboard side shell doors.

2.1.2 SWL at 2.55 meters is 6000 kg, SWL at 5.3 meters is 2500 kg, and the proof load of 3175 kg is applied at 5.3 meters.

2.2 Standards

2.2.1. The Contractor must complete the specified work in a manner that is acceptable to the Chief Engineer and TCMS Inspector.

2.2.2. The Contractor must adhere to the Ships ISM Hot-work, Confined Space Entry, Fall Protection and Lockout procedures.

2.3 Regulations

2.3.1 . This ship is regulated by Transport Canada and all work performed must be approved and inspected by Transport Canada Marine safety Inspector.

2.3.2 Welding shall be in accordance with the Canadian Coast Guard Welding Specifications for ferrous Materials, Rev. 4 (TP6151E).

2.4 Owner Furnished Equipment

2.4.1 The contractor shall supply all materials, equipment, labor, 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 / arrange the crane to lift the boom off and back onto the vessel.

3.1.2 The Contractor shall meet with the Chief Engineer prior to commencing the work on this boom to ensure proper locks are in place and side doors can be opened.

3.1.3 The Contractor shall disconnect the hydraulic connections, install caps and plugs to the ends of the hydraulic lines for the duration the boom is ashore and shall be responsible to contain and clean up any residual oil left in the lines when being disconnected. The Contractor shall be responsible to ensure no pollutants are released.

3.1.4 The Contractor shall be responsible to clean up any oil spilled and dispose of the oil and contaminated materials in accordance with the local laws.

3.1.5 Once the hydraulic are let go, the Contractor can proceed in removing the securing bolts for the boom while having the crane take the weight of the boom.

3.1.6 Once it is unsecured, the crane can lift it ashore and it shall be transported to the shop.

3.1.7 The hydraulic rams shall be dismantled, re-chromed, and new seals installed.

3.1.8 The contractor shall perform Ultrasonic Testing on all welds of the Boom to check for cracks. Any cracks found shall be welded / repaired by an approved welding procedure and shall be costed through PWGSC 1379 action.

3.1.9 The Contractor shall allow $5000.00 for repairs and acquisition of new seals for the rams to be adjusted up or down by PWGSC 1379 action.

3.1.10 Once all the repairs are completed and new seals are installed, the rams shall be bench tested for leaks at the Contractor's shop.

3.1.11 Once this proves to be satisfactory, the boom can be reassembled, and transported back to the ship.

3.1.12 The Contractor shall arrange the crane required to re-install the boom onto the ship and secure the fasteners.

3.1.13 The boom must be hydraulically connected and then in conjunction with the ship's crew, operationally tested.

3.1.14 Once it is proven operational, the Contractor shall load test the boom with the certified weight of 3175 Kg at a distance of 5.3 meters. The Contractor shall arrange the schedule for Transport Canada and supply the necessary certificates to prove the load.

3.1.15 The Contractor shall pass along the certificate from TC to the vessel's owners.

3.2 Location

3.2.1 The boom is located on the upper deck, on the starboard side, in the shell door area, between frames 52-53.

3.3 Interferences

3.3.1 The contractor shall be responsible for the identification of all interference items, their temporary removal, storage, and refitting to the vessel.

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

4.1.1 All the work must be completed to the satisfaction of the Chief Engineer and TCMS Inspector.

4.2 Testing

4.2.1 The Contractor shall supply / perform a full function test and the load test of 3175 kgs. to certify the boom as being safe to use. This test shall be witnessed by the Chief Engineer & TCMS.

4.2.2 The contractor shall perform Ultrasonic Testing on all welds of the Boom to verify no presence of cracks.

4.3 Certification

4.3.1 The vessel's owners and TCMS will require certificates for the load cell and the weight being used. The owners shall require a certificate from TC stating the boom is acceptable for service and when required to be tested again at next interval.

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The Contractor shall provide three copies of a detailed report in electronic format to the Chief Engineer indicating the condition of the boom prior to working, the work performed, all parts used, and the condition as left.

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be for the Contractor to remove the old wire ropes from the main trawl winch drums and install new Owner Supplied wire ropes.

1.2 The Contractor shall work with the Fishing Officer onboard the Teleost as the operator of the main trawl winch and schedule the local crane company to supply the empty spools to reel the wire ropes off the main drums off the Teleost. The new wire ropes shall then be installed / spooled onto the ship and the empty spools shall be used to store the old wire ropes. This wire rope shall be removed / installed one side (port or stbd) at a time.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1. The new wire ropes for the main trawl winches are kept in fleet technical stores in St. John's. Holden's crane company has the empty drum for changing the warps over on the Teleost.

2.2 Standards

2.2.1. The old wire ropes shall be removed in a fashion and stored neatly on the spools from which the new wire ropes were shipped. Care must be exercised to transfer the wire ropes properly and not in a manner to induce kinks or loose turns on the drums.

2.2.2. The Ship's ISM Hotwork, Confined Space Entry, Fall Protection, and Lockouts must be adhered to at all times.

2.3 Regulations

2.3.1. The wire ropes are replaced every four years on the Teleost.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1. The Contractor shall consult with the Chief Engineer and Fishing Officer to schedule this work. The Fishing Officer shall operate the main trawl winches from the bridge and be in direct contact with the personnel on the dock via radio.
3.1.2. The Contractor shall arrange for Holden's Transport to bring the empty spools to facilitate the replacing of the wire ropes.
3.1.3. Once Holden's are set up on the dock, the wire ropes off one drum onboard the Teleost will be connected to the empty drum on the dock. The old wire ropes shall be payed off one side of the Teleost and stored on the reel on the dock.
3.1.4. Once it is all removed on one side, the new can be re-installed, following manufacturer's instructions for proper spooling and no damage (kinks / loose turns).
3.1.5. Once the new wire rope is loaded onto one side, the old wire rope shall be moved from the working reel to the empty shipping reel.
3.1.6. Once the reel is empty again, the other side of the Teleost shall be removed. Once it is all off, the new one shall be loaded in a manner according to the manufacturer's rigging instructions.
3.1.7. Finally, the Contractor shall place the other old wire rope onto the empty spool used to ship the new wire rope.

3.0 Location

3.2.1. The Main Trawl Winches are mounted on the Upper Deck between frames 25 and 30, on both the Port and Starboard sides.

3.1 Interferences

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

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

4.1.1. All the work completed must be to the satisfaction of the Fishing Officer and Chief Engineer.

4.2 Testing

4.2.1. The new wire ropes will be tested during the 8 hour sea trial included in the refit..

4.3 Certification

4.3.1 N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 N/A.

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be for the contractor to sand blast, prime, and paint the inside of the casing of the Stbd Engine Room Supply Fan Casing including the inside of the intake hood and fan tunnel. The total area is measured at 60 M^2 including a percentage for frames, brackets and wire ways. The contractor shall quote on blasting 60 M^2 to a commercial blast profile to remove the rust and feather the intact coating, and apply International Paint.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 MSL as Fitted, Paint Schedule, 4192-1700
2.1.2 MSL General Arrangement, 4192-4000
2.1.3 Profile & Decks Plan R-137-200-400

2.2 Standards

2.2.1. The total internal area of the casing including intake hood and fan tunnel shall be commercial blast to remove any loose paint and rusted surfaces to a grey finish and feather back adjacent areas to allow smooth transition.
2.2.2. The work shall be certified by a NACE Inspector during the grit-blasting and during the application of coatings. Contractor shall arrange Nace Inspector as required.
2.2.3. The grit / welding slag shall not be allowed to enter any part of the vessel. The contractor shall ensure that all openings in the vessel shall be suitably covered. Any machinery or other equipment any where in/on the vessel, susceptible to damage by either grit blasting, coating material or welding shall be suitably protected as necessary, by the contractor.
2.2.4. Welding shall be in accordance with the Canadian Coast Guard Welding Specifications for Ferrous Materials, Revision 4. (TP6151 E)

2.3 Regulations

2.3.1 The local regulations governing the work on elevated platforms must be strictly adhered to, while performing the work aloft. The Ship's ISM Hotwork, Confined Space Entry, Fall Protection, and Lockouts must be adhered to at all times.
2.3.2 The local regulations regarding the environmental protection must be adhered to while paint removal and application is being performed.
2.3.3 The ship is regulated by Transport Canada and all work performed must be approved and inspected by Transport Canada Marine Safety Inspector.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.2 The Stbd Engine Room Supply Fan Casing, Intake Hood, and Fan Tunnel shall be grit blasted to prepare for recoating.

3.1.3 The total area shall be commercial blasted to a grey profile to remove the rusted and loose paint areas. The contractor shall include 60 M^2 to be grit blasted, agreed upon by the Chief Officer and the contractor. The contractor shall also provide a cost for each additional square meter to be blasted and painted that shall be adjusted up or down by PWGSC 1379 action.

3.1.4 The Contractor shall include in their bid a cost for the replacement of one (1) square meter of steel plating same as original (7.0 mm pl., to be confirmed from Profile & decks Dwg.) and each additional square meter deemed to have the thickness wasted past that allowed by TCMS. The contractor shall coat both sides of any new steel replaced. This shall be adjusted up or down by PWGSC 1379 action. Contractor shall also include in their bid, cost for 24 shots of Ultrasonic Testing (UT shots) to be adjusted up or down by PWGSC 1379 action. (These UT shots for suspect areas).

3.1.5 The contractor shall ensure all traces of grit are removed from the surface prior to application of coatings. The contractor shall be responsible for removing all grit blast material, once the blasting has stopped.

3.1.6 The grit / welding shall not be allowed to enter any part of the vessel. The contractor shall ensure that all openings in the vessel shall be suitably covered. Any machinery or other equipment any where in/on the vessel, susceptible to damage by either grit blasting, coating material or welding shall be suitably protected as necessary, by the contractor.

3.1.7 Once the blasted spots are completed, the total metal areas shall be coated with one coat of Intershield ENA 300 Bronze, @ 6 MILS DFT, and one coat of Intershield ENA 300 Aluminum, @ 6 MILS DFT.

3.1.8 When the second coat of Intershield 300 has been applied and has cured, the top coats can be applied.

3.1.9 The total areas to be painted is 60 M^2, and shall be coated with two top coats of white Intersheen LA, and applied at 2 MILS DFT per coat.

3.1.10 The contractor shall adhere to the manufacturer's instructions, and comply fully with Transport Canada and Environmental Policies and Regulations.

3.2 Location

3.2.1 The Stbd Engine Room Supply Fan Casing is located at fr. 14 to fr.16 on the Stbd side of the Main Deck (Trawl Deck).

3.3 Interferences

3.3.1 The contractor shall be responsible for the identification of all interference items to complete this task, their removal, temporary storage, and refitting to the vessel.

3.3.2 It is the intention of the owners to also remove the Stbd Engine Room Supply Fan for servicing. This is outlined in another specification item E-8.

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

4.1.1 All work must be completed to the satisfaction of the NACE Inspector, Chief Engineer, and TCMS Inspector.

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The contractor shall provide a report on the condition of the area prior to working, the work performed, and the condition left.

5.1.2 The NACE inspector shall provide paint reports on the conditions of the prepared surface prior to painting, the temperature and humidity readings, and the paint thickness readings.

Part 1: SCOPE:

1.1 The Contractor shall remove the Wave Gate, renew Hydraulic hoses and rebuild hydraulic rams. Once wave gate is removed, inspect bulkhead forward of Wave Gate (UT) for thickness of steel. This bulkhead is the aft section of Fuel-Oil Tank #9 port & stbd.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 1-137-464-448 Stern Gate with Roller.

2.1.2 R-137-200-400 Profile & Decks.

2.2 Standards

2.2.1 Welding shall be in accordance with the Canadian Coast Guard Welding Specifications for Ferrous Materials, Revision 4. (TP6151 E)

2.2.2 The Contractor shall be currently certified by the Canadian Welding Bureau (CWB) at the time this work is performed.

2.3 Regulations

2.3.1 The local regulations governing the work on elevated platforms must be strictly adhered to, while performing the work aloft. The Ship's ISM Hotwork, Confined Space Entry, Fall Protection, and Lockouts must be adhered to at all times.

2.3.2 The ship is regulated by Transport Canada and all work performed must be approved and inspected by Transport Canada Marine Safety Inspector.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 Wave Gate or sometimes called Fish Gate in older original plans is operated from controls on the trawl deck, and is fitted with a roller on top, to reduce friction of trawl when hoisting trawl aboard.

3.1.2 All Hydraulic fittings replaced shall be made from Stainless Steel and shall be crimped to hoses. All fittings and hoses shall be measured and replaced with same I.D. All fastenings shall be renewed.

3.1.3 Rams shall be removed and brought to Contractors workshop, shall be dismantled, disassembled, measured and checked for excessive wear. Rams shall be rebuilt using only new materials, seals and "O"Rings.

3.1.4 Roller on top of wave gate shall be removed and all bearings shall be replaced with new contractor supply.

3.1.5 The Contractor shall include in their bid, 50 UT shots (Ultrasonic Testing) as determined by the Chief Engineer & TCMS to give indication of the average thickness of bulkhead of aft section of #9 Fuel Oil Tank port & stbd. The Contractor shall also include in their bid the cost to replace one (1) square meter of steel plate, same as original to be adjusted up or down by PWGSC 1379 action and subsequent testing of #9 Fuel Oil Port & Stbd Tanks for TCMS certification.

3.1.6 The contractor shall supply / apply coating to any affected area: 1 coat of Intershield ENA 300 Bronze @ 6 MILS DFT, 1 coat Intershield ENA 300 Aluminum @ 6 MILS DFT, 2 coats White Intersheen LA @ 2 MILS DFT per coat (this shall only apply to one (1) side only).

3.2 Location

3.2.1 Main Deck Frames 4-5, Just forward of the Trawl Ramp.

3.2.2 The Lower Deck Frames 4-5, Access through Manhole cover in Workshop and Emergency Generator Room.

3.3 Interferences

3.3.1 Heating coils, with hot water to prevent icing. Piping is partly welded and shaped and is connected with swaged fittings.

3.3.2 The contractor shall be responsible for the identification of all interference items to complete this task, their removal, temporary storage, and refitting to the vessel.

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

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

4.2 Testing

4.2.1 Contractor to provide hydrostatic test (or air test if accepted by TCMS) on both Port & Stbd #9 Fuel Oil Tanks.

4.3 Certification

4.3.1 Contractor to provide certificates of testing on Port & Stbd (#9) Fuel Oil Tanks.

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 Contractor to provide work report for repairs to hydraulic rams and list of materials used.

5.2.1 Contractor is responsible to provide Chief Engineer & TCMS with details and drawings of any structural repairs to adjoining bulkheads to Port & Stbd Fuel Oil Tank #9.

5.2 Training - N/A

5.3 Manuals - N/A

5.3 Photo.

5.3.1 

Part 1: SCOPE:

1.1 The intent of this specification is to have the Contractor onboard to perform a minimum of three hours dockside trials, and six hours of continuous sea trials.

1.2 The intention of the dock trials is to run up the affected machinery during the past refit (M/E Lo-Rez Mounts & Coupling) to operating temperatures and pressures, check for abnormal vibrations and temperatures, record operating parameters from the main gearbox and main engine. The load is limited on the main engine while at the dock to ensure no damage to the propeller, kort nozzle, or rudder occurs.

1.3 The intention of the sea trial is to run for 4 hours at 700 rpm, and 2 hours at 850 rpm, with the maximum pitch permitted on both speeds.

1.4 During the sea trials the Contractor shall obtain the services of P and M Mechanical to measure and record the vibration of the ship at 0 and 100% pitch at both the 700 and 850 rpm speeds.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 The location of vibration readings taken shall be in the same area as the previous years, according to the copy of the report held by the Chief Engineer.

2.2 Standards

2.2.1 N/A

2.3 Regulations

2.3.1 This ship is regulated by Transport Canada and all work must be approved by them, and subjected to the inspection of the attending TCMS Surveyor and Chief Engineer.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 The Contractor shall ensure there are sufficient personnel onboard to attend to/repair any faults directly related to the equipment worked on by the Contractor during the refit.

3.1.2 The Contractor shall ensure there are workers available to perform dock trials with the amount of pitch being limited to what the Owner's Representative feels is a safe level. This shall be performed for three hours to allow everything to rise to operating temperatures and settle out. Once this is deemed to be satisfactory by the Chief Engineer and TCMS Inspector, the sea trial shall be scheduled.

3.1.3 Sea trials shall be scheduled for six hours and the contractor shall ensure there are sufficient workers available to attend to any repairs required to affected machinery (alignment).

3.2 Location

3.2.1 Alignment of Main Engine / Lo-Rez Mounts / Lo-Rez Coupling to Gear Box.

3.3 Interferences

3.3.1 The contractor shall be responsible for the identification of all interference items, their temporary removal, storage, and refitting to the vessel.

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

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

4.2 Testing

4.2.1 These sea trials are to prove the integrity of the machinery worked on by the Contractor during the past refit, and shall be included in the reports delivered to the Chief Engineer.

4.3 Certification

4.3.1 N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The operating condition of the equipment worked on shall be included in the three copies of the work reports in electronic format from the Contractor to the Chief Engineer at the end of refit.

5.2 Training

5.2.1

5.3 Manuals

5.3.1

Part 1: SCOPE:

1.1 The intent of this specification shall be to open up the Pyro boiler for cleaning, inspection and testing in order to obtain credits from TCMS.

1.2 The boiler must be fully dismantled, cleaned, inspected by TC, re-assembled, and pressure tested to 3 bar and all deemed satisfactory to the attending surveyor and Chief Engineer.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 The boiler is a Pyro Boiler, Hot Water
Model #A 600 S 1972 Combi
693 KW Exhaust/232 KW Oil/40 KW Electric
Maximum working pressure 2 bar.

2.2 Standards

2.2.1 The contractor shall meet the manufacturer's instructions for the maintenance performed on the boiler. The Ship's ISM hot work, confined space entry, fall protection, and lock out procedures must be adhered to.

2.2.2 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.

2.3 Regulations

2.3.1 The contractor shall meet all TC regulations and follow the Canada Shipping Act pertaining to the inspection and maintenance performed on the pressure vessel.

2.4 Owner Furnished Equipment

2.1.1 The contractor shall supply all the 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 must ensure the boiler is isolated and locked-out prior to commencing work on the unit.

3.1.2 The contractor shall provide a continuous supply of hot potable water and heating water to the ship for the period when the boiler is non-operational. The hot water has to be supplied for 24 hours a day, at 80 degrees C on both the heating and potable water systems.

3.1.3 Once the alternate hot water systems are in place, the boiler has to be drained for the contractor to properly dispose of. All the boiler mountings must then be removed and blanks installed.

3.1.4 There are a total of three valves to remove for inspection. The main inlet, outlet, and drain valves shall be removed and opened for TC inspection. The valves and seats shall be lapped and new packing supplied / installed upon reassembly by the contractor.

3.1.5 The contractor shall remove the top cover on the boiler and clean the boiler tubes, piping, and end pieces thoroughly with a stiff brush with an extended handle. The exhaust chambers shall be opened for inspection, all inspection covers shall be removed and replaced with new contractor supplied gaskets.

3.1.6 The contractor shall clean the boiler internally using Drew Safe Acid, Oaktite, or an approved equivalent. Circulation of the solution must be pumped from a separate solution tank (contractor supplied) into the boiler at the top supply valve, and return from the bottom valve flange. The concentration and circulation of the solution must be as per manufacturer's instruction. Once the cleaning process is completed, the boiler must be thoroughly flushed with fresh water. The cleaning solution and flush water must be received at the owner's facility and disposed of in accordance to local and Environmental Regulations by the contractor. Under no circumstances will these waters be permitted to enter the ship's bilge area.

3.1.7 The contractor shall be responsible for scheduling the attending TCMS surveyor at points previously agreed upon, to inspect the boiler and allow the contractor to proceed to the next stage of survey.

3.1.8 The contractor shall arrange a burner technician and remove the burner and burner plate. The ceramic plates in the combustion chamber and burner plate shall be inspected and replaced as necessary. The gasket for the burner plate must also be inspected and checked for damage, and replaced if necessary. The burner tube must be cleaned and checked. The burner insert shall be removed, the parts cleaned, the nozzle replaced, and the electrode adjustments confirmed. The air inlet and blower wheel must be cleaned of all debris and reassembled in good working order. The gas pressure expansion vessel shall be inspected and determined to have a working pressure that is equal to the static height over the expansion tank, when the water is cold. The filters shall also be replaced in the oil pump.

3.1.9 The contractor shall remove the two pressure relief valves from the boiler and send them to an accredited firm to have them re-certified and returned to the vessel, along with certificates.

3.1.10 The ceramic plates, burner nozzle, and oil pump filters shall be Owner supplied.

3.1.11 The contractor shall hydrostatically pressure test the boiler to 3 bar for one hour, or a pressure and time to satisfy the attending TCMS surveyor.

3.1.12 The contractor shall hydrostatically pressure test the potable hot water coil to 5.5 bar for one hour, or to a pressure and time to satisfy the attending TCMS surveyor.

3.1.13 The contractor shall arrange the attendance of the TCMS and Chief Engineer to witness the hydro-test.

3.1.14 After all this work is completed, and marine surveyor is completely satisfied, the contractor shall remove all the blanks and completely reassemble the boiler.

3.1.15 The set points for the thermostats and pressure switches must all be positioned to the points identified in the boiler manual. The safety valves must be checked for leaks and the contractor shall allow for safety valve testing in the event it is required by TCMS. The automatic ventilation valve shall be cleaned and checked.

3.1.16 The contractor shall test the function of the boiler and all the safety shut-downs to the satisfaction of TCMS and the Chief Engineer. Any defects / leaks in the covers and fittings must be secured by the contractor at the contractor's expense.

3.1.17 The contractor shall obtain the services of a burner technician to check and adjust the burner parameters to achieve the maximum efficiency and clean burning characteristics desired. The contractor shall bid an allowance of $2000.00 for the services of a burner technician to be adjusted up or down by PWGSC 1379 action upon proof of invoice.

3.1.18 Once the boiler is tested and TCMS is satisfied, the contractor shall put the boiler back into service and remove the temporary hot water supply from the vessel.

3.2 Location

3.2.1 The boiler is located in the port casing, between frames 10-15.

3.3 Interferences

3.2.1 The contractor shall be responsible for the identification of all interference items, their temporary removal, storage, and refitting to the vessel.

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

4.1.1 The contractor shall be responsible for arranging the attendance of the TCMS and Chief Engineer during the survey work, to allow the contractor to proceed to the next step.

4.2 Testing

4.2.1 Pressure tests have been identified in this specification and may be subjected to slightly different heights and times, depending on the TCMS.

4.3 Certification

4.3.1 The contractor shall provide the Chief Engineer with Certificates verifying the tests completed on the pressure relief valves. Two copies are required.

Part 5: DELIVERABLES:

1.1 Drawings/Reports

5.1.1 The Contractor shall provide three copies of a detailed report in electronic format to the Chief Engineer indicating the condition of the boiler prior to working, the work performed, all parts used, and the condition as left

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

CCGS TELEOST	2013	VERSION 1
Spec item #: E-2	**SPECIFICATION**	TCMSB Field #: N/A
MAIN ENGINE LO-REZ ISOLATION MOUNTS REPLACEMENT		

Part 1: SCOPE:

1.1 The intent of this specification shall be to remove the 6 old and install 6 new Lo-Rez vibration isolation mounts for the main engine on the Teleost. The components shall be witnessed by the Chief Engineer.

1.2 This work shall be carried out in Conjunction with Lo-Rez Coupling replacement (E-3) and the alignment verification of the main engine and gearbox after replacement of these mounts and Lo-Rez Coupling.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1. The main engine is fitted with 6 LoRez mounts, Type BR4-HS. The reference required for overhaul is the LoRez Instruction Manual.

2.2 Standards

2.2.1. The engine mounts shall be overhauled and adjusted in accordance with the standards identified in the instruction manual.

2.3 Regulations

2.3.1. The engine mounts were replaced in 2012, but it has been recommended by the Review Committee to have them replaced on an annual basis.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1. The contractor shall include in their bid for the services of a Lo-Rez FSR to assist in the installation / adjustment, of the six (6) new LoRez mounts. The FSR shall ensure that mounts are properly installed, Lo-Rez Coupling properly installed and main engine re-aligned.

3.1.2. The piping on the front of the engine shall be disconnected to obtain sufficient height to jack the engine and permit removal of the mounts.

3.1.3. The contractor shall remove all piping, brackets, and covers to gain access to the work. The crew shall isolate all systems involved with this piping removal prior to any work commencing.

3.1.4. The contractor shall remove the six (6) spring isolation mounts. Only one isolator can be removed at a time. The engine shall have to be jacked and supported in the area of the mount. The new mount can only then be installed into position.

3.1.5. Once all the mounts have been replaced, the contractor shall torque down all the mounts as specified by the FSR. The Contractor shall reconnect all piping, brackets, covers, etc, that was removed to complete this work. The Contractor shall supply / install new gaskets and apply anti seize to bolts / nuts.

3.1.6. The contractor shall check the alignment between the main engine, lo-rez coupling and gearbox and prove acceptable to the Chief Engineer. The contractor shall include in their bid $5000.00 to perform / confirm laser alignment and to make adjustments. This shall be adjusted up or down by PWGSC 1379 action upon proof of invoice (after Lo-Rez coupling has been replaced).

3.1.7. Once all the adjustments are made, the mounts can be torqued and the stops set up to the proper clearances.

3.2 Location

3.2.1. The six mounts are installed under the main engine, in the main engine room.

3.3 Interferences

3.3.1. Contractor shall be responsible for the identification of all 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 LoRez FSR and Chief Engineer.

4.1 Testing

4.2.1 The main engine shall be run and any abnormal vibrations shall be verified.

4.3 Certification

4.3.1 N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The Contractor shall provide three (3) copies of a detailed report in electronic format to the Chief Engineer indicating the Final Lazer Alignment Readings.

5.3 Training

5.2.1 The Lo-Rez FSR shall train the E/R crew on proper maintenance and adjustment procedures of the main engine mounts.

5.3 Manuals

5.3.1 N/A

CCGS TELEOST	2013	VERSION 1
Spec item #: E-3	**SPECIFICATION**	TCMSB Field #: N/A
MAIN ENGINE LO-REZ COUPLING REPLACEMENT		

Part 1: SCOPE:

1.1 The intention of this specification shall be to have the Lo-Rez flexible coupling removed between the main engine and gearbox, and replaced with the owner supplied coupling. Credits are to be obtained from TC.

1.2 This work shall be carried out in Conjunction with the alignment verification of the main engine and gearbox after replacement of Lo-Rez main engine mounts (specification item E-2).

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 The CCGS Teleost is fitted with a Lo-Rez coupling between the main engine and main gearbox. It is part of the Lo-Rez vibration Control System and it is a steel spring flexible coupling. It is Type IHF, with serial # 4994, and it is located on the main engine flywheel.
NOTE: Spare coupling stored in Coast Guard Technical Stores.

2.2 Standards

2.2.2. The coupling shall be replaced in accordance with the standards identified in the manufacturer's instruction manual / FSR.

2.3 Regulations

2.3.1 This vessel is regulated by Transport Canada and all work performed shall be approved / inspected by TCMS Inspector and the Chief Engineer.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 The contractor shall remove all the piping, brackets, and covers to gain access to the work area. Contractor shall transport the new coupling to the vessel and the old coupling back to fleet technical stores.

3.1.2 The contractor shall include in their bid the services of the FSR Richard Hordyk (Lo-Rez) to visit the ship to ensure the Lo-Rez Coupling is properly installed and main engine re-aligned.

3.1.3 The contractor shall remove the old coupling (under FSR supervision) from the engine and install the new coupling.

3.1.4 The contractor shall re-install the piping, brackets, and covers as found.

3.1.5 The contractor shall be responsible for arranging the visit of the TCMS Inspector to inspect the installation of the new coupling.

3.1.6 The contractor shall open the old coupling, layout the steel laminations and the spool section for Transport Canada inspection, and then re-install the laminations and spool sections.

3.1.7 The contractor shall then realign the engine using Lazer Alignment. Once the alignment is proven to be satisfactory to the Chief Engineer, all hardware has to be torqued down.

3.2 Location
3.2.1 The Flexible Coupling is fitted between the main engine and the main gearbox, in the main engine room.

3.3 Interferences
3.3.1 The Contractor shall be responsible for the identification of all interference items, their temporary removal, storage and refitting to vessel.

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection
4.1.1. All work must be completed to the satisfaction of the Chief Engineer and TCMS Inspector.

4.2 Testing
4.2.1 The main engine shall be run up and any abnormal vibrations shall be verified. The coupling shall be tested during the scheduled sea trials also.

4.3 Certification
4.3.1 N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports
5.1.1 The contractor shall deliver to the Chief Engineer, 3 copies the work report in electronic format stating in detail the work performed on the flexible coupling. A copy of the final alignment shall be included in this report.

5.2 Training
5.2.1 N/A
5.3 Manuals
5.3.1 N/A

CCGS TELEOST	2013	VERSION 1
Spec item #: E-4	**SPECIFICATION**	TCMSB Field #: N/A
SWEEPLINE WINCHES INPECTION / REPAIR		

Part 1: SCOPE:

1.1 The intent of this specification shall be to remove from their seating, transport to Rolls-Royce facility, Rolls-Royce FSR shall disassemble, inspect, repair and re-assemble the two (2) Port Sweepline Winches. The Contractor shall include in their bid the services for the FSR. Winches shall be reinstalled / aligned onto their seats. Any parts worn beyond manufactuer's specifications shall be replaced (Owner Supplied).

1.2 This work shall be carried out in conjunction with the specification E-5 relating to the low pressure control valves for each winch.

1.3 **NOTE:** <u>This item shall only be completed in the event that, through a separate contract issued outside of this refit spec to Rolls-Royce for Inspection only, it is found that the Sweepline Winches need to be overhauled.</u>

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 The Hydraulic Winches are Brattvaag, Type DSM 4185L , with port outboard identified as 88535 and port inboard as 88536 Drawing numbers 171-072-02 and 164-747. Port inboard is 1988024 and port outboard is 198013.

2.1.2 The Hydraulic Motor Type is M4185-BL.

2.1.3 The performance data is 10 ton.

2.1.4 Weight of each winch is 2.2 tons.

2.1.5 The authorized FSR is Rolls Royce.

2.2 Standards

2.2.1 All work shall be carried out to the Manufacturer's Instructions.

2.2.2 All parts of the winches shall be measured and recorded to ensure they are within the Manufacturer's Specifications.

2.2.3 The Ship's ISM Hotwork, Confined Space Entry, Fall Protection, and Lockouts must be adhered to at all times.

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

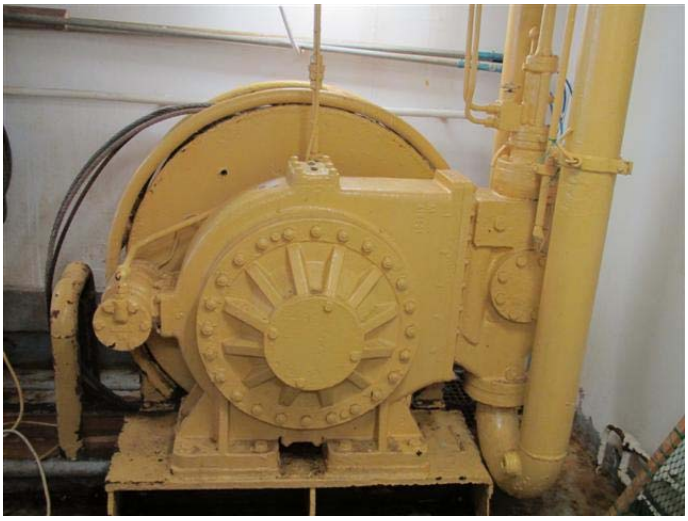
3.1 General

3.1.2 The contractor shall ensure that the low pressure hydraulic system shall be locked out and tagged out, prior to commencing any work.

3.1.3 The engineroom staff shall drain down the hydraulic oil in the low pressure hydraulic system before any work begins. The contractor shall take all the necessary precautions to contain any hydraulic oil that may leak out when the hydraulic connections are broken. The contractor shall have onsite sufficient absorbent padding and oil absorbing material to contain what leaks out of the hydraulic system and pipes. The contractor shall be responsible for the proper disposal of this material.

3.1.4 The contractor shall quote on disconnecting the sweepline hydraulics and capping the lines. The contractor shall quote on the removal of the winches from the bedding, transportation to the repair facility, over-haul, return to vessel, re-installation / connection, and testing the sweepline winches.

3.1.5 Port outboard winch is shown here:



3.1.6 Port inboard winch is shown here:

3.1.7 The winches are approximately 2.2 tons each and will have to be lifted from the bedding, which consists of removing eight hold down bolts on each winch. Also, the contractor must remove some guide railing that is welded to the deck and around each drum, and shall re-weld back once the winches are re-installed.

3.1.8 Guide railing shown for port outboard:

3.1.9 Guide railing shown for port inboard:

3.1.10 Once the interference railing is removed, the winches will have to be moved aft about 30 feet from under the upper deck, in order to be able to lift the winches from the open deck, onto a transportation vehicle to the repair facility by the contractor.

3.1.11 Once at the repair shop, the contractor, shall remove the cover from the hydraulic motor to carry out the inspection of the hydraulic motor housing, rotor and vanes. The contractor shall rotate the rotor 360^0 to carry out this inspection by the Chief Engineer and Rolls Royce FSR.

3.1.12 The contractor shall remove and open up the pedestal bearing for inspection by the Chief Engineer and Rolls Royce FSR.

3.1.13 The contractor shall remove the wire drum from the motor drive shaft for the inspection of the flexible coupling by the Chief Engineer and Rolls Royce FSR.

3.1.14 The vanes and bearings shall be replaced inside the winch and all machining shall be performed according to the manufacturer's instructions. The contractor shall allow $5000.00 for machining the new vanes for both of the sweepline winches. This shall be adjusted up or down by PWGSC 1379 action.

3.1.15 The contractor shall install new Owner supplied gaskets and seals during re-assembly.

3.1.16 After the inspections have been carried out and any repairs completed, the contractor shall reassemble all components in good working order under the supervision of the Rolls Royce FSR.

3.1.17 The contractor shall transport the winches back to the vessel and supply / install new high grade bolts and nuts when re-securing the winches to the bed plates. Care shall be taken to ensure the <u>same shims</u> are returned to the same location underneath the winches so that alignment is not disturbed. Anti-seize compound shall be applied to the hold down bolts and all fasteners used.

5.2 Location

3.2.2 The sweepline winches are located on the port side of the main deck at frames 57-60.

5.3 Interferences

3.3.1 The contractor shall be responsible for the identification of all interference items, their temporary removal, storage, and refitting to vessel.

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

4.1.1 The Chief Engineer and the Rolls-Royce FSR shall inspect the Winches upon disassembly.

4.2 Testing

4.2.1 The contractor shall provide the services of an FSR from Rolls Royce to ensure that that all the air has been purged from the low pressure hydraulic system after it has been re-charged and carry out testing / operation of the equipment specified in Specification E 3 and E4.

4.2.2 The Contractor shall supply a load cell to carry out static load tests on both sweepline winches. The performance data is rated at 10 tons, so the contractor shall determine a strong point to fasten the load cell and adjust the settings of the relief valves to ensure both winches are set to the manufacturer's specification.

4.3 Certification

4.3.1 The contractor shall provide a copy of the certificate for the load cell used in the testing of the sweeplines.

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The contractor shall supply 3 copies in electronic format of detailed work reports describing both sweepline winch conditions as found, the work performed, and the condition left, complete with load testing and relief valve setting.

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be to remove, disassemble, inspect, repair and reinstall the Control Valves on the port inboard and outboard sweepline winches for the Chief Engineer.

1.2 This work shall be carried out in conjunction with Specification E-4 concerning the overhaul of the Sweepline winches.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 The Sweepline Winch Control Valves are Type E20D/R8 Drawing 163-167.

2.2 Standards

2.2.1 All parts of the control valve shall be measured and recorded to ensure they are within the Manufacturer's Specifications.

2.2.2 The Ship's ISM Hotwork, Confined Space Entry, Fall Protection, and Lockouts must be adhered to at all times.

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

2.4.1 The contractor shall supply all materials, equipment, labor and parts required to perform the specified work unless stated otherwise. The contractor shall be responsible for the cost and arranging work at Rolls Royce Hydraulic Shop.

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 The contractor shall ensure that the low pressure hydraulic system shall be locked out and tagged out. The contractor shall ensure that the control air to the control valves are shut down and isolated before removing the valve.

3.1.2 The engine room staff shall drain down the hydraulic oil in the low pressure hydraulic system before any work begins. The contractor shall take all the necessary precautions to contain any hydraulic oil that may leak out when the control valves are removed. The contractor shall have onsite sufficient absorbent padding and oil absorbing material to contain what leaks out of the piping. The contractor shall be responsible for the proper disposal of this material.

3.1.3 The contractor shall mark each valve to ensure that it is returned to the correct winch. The contractor shall remove the control valves from the sweepline winches.The valves can be removed in place, or when the winches are at the repair facility. The contractor shall then blank off the inlet and outlet from the low pressure hydraulic system at each winch connection.

3.1.4 The contractor shall transport the control valves to the Rolls Royce hydraulic shop. The Rolls Royce FSR shall disassemble, inspected, measured and re-assembled the control valves. Any parts that are worn beyond manufacturer's specification shall be replaced.

3.1.5 The port outboard winch control valve:

3.1.6 Port inboard winch control valve:

3.1.7 After the Rolls Royce FSR has completed the overhaul of the control valves the contractor shall transport the valves back to the vessel. The contractor shall re-install the control valves to the correct winch. The contractor shall re-connect to the control valves to the hydraulic piping and control air system. The contractor shall use new contractor supplied gaskets suitable for use in hydraulic oil and the correct thickness for that diameter pipe. The contractor shall use new contractor supplied bolts and nuts and apply anti-seize compound when installing the bolts and nuts.

3.1.8 The contractor shall request the engineroom staff to remove the lockout / tagout, re-charge the low pressure hydraulic system, and to turn on the control air. The contractor shall be responsible to repair any air leaks or hydraulic leaks on the connections where they have worked on at their expense.

3.2 Location

3.2.1 Sweepline Winches Control Valves are located on the main deck at frames 57-60, directly on the winches.

3.3 Interferences

3.3.1 The contractor shall be responsible for the identification of all interference items, their temporary removal, storage, and refitting to vessel.

Part 4: PROOF OF PERFORMANCE:

4.2 Inspection

4.1.1 The Chief Engineer shall inspect the valves upon disassembly.

4.2 Testing

4.2.1 The contractor shall provide the services of an FSR from Rolls Royce to ensure that that all the air has been purged from the low pressure hydraulic system after it has been re-charged and carry out testing on Specification items E 4 and E3.

4.2.2 The contractor must verify correct operation of the control valves, locally and remotely once all items are returned to the ship and properly connected. All hydraulic and air connections shall be tested and proven leak free.

4.3 Certification

4.3.1 N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The Rolls Royce FSR shall provide 3 copies of a report that shall include the condition of the control valves as found, the work performed, and the condition left, complete with load testing, photos of any damage and measurements taken.

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.3 The intention of this specification shall be to have the fuel oil transfer pump taken apart, inspected by TCMS, repair any defects, reassemble, function test and obtain full credits from the attending surveyor.

1.4 The Contractor shall consult with the Chief Engineer prior to commencing any work on this machinery to ensure the fuel has been transferred to the correct locations to avoid disruption in the scheduled fuel tank testing.

1.5 The fuel transfer pump shall be isolated electrically, install blanks and install locks on the fuel valves in the system.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1. The fuel oil transfer pump is an Allweiler, with a capacity of 55.8 m^3/hr. and the pump number is 66.T78904. Pump type is SLF940ER42U12.1 W1Nr-T 78904/001.

2.2 Standards

2.2.1. The work performed on this pump must be in accordance with the latest Transport Canada Regulations concerning marine safety. The Contractor must exercise cleanliness when working on the inside of this pump and must lay out the components in an orderly fashion for the viewing by the attending surveyor.

2.2.2. The Ship's ISM Hotwork, Confined Space Entry, Fall Protection and Lockout must be adhered to at all times.

2.2.3 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.

2.3 Regulations

2.3.1. All regulations pertaining to the overhaul of and maintenance to fuel transfer pumps onboard ships must be adhered to at all times.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1. The Contractor must consult with the Chief Engineer prior to commencing the work on this pump. All fuel transfers will have to be completed to ensure the necessary tanks are emptied for inspection.

3.1.2. The Contractor shall take and record the amperage reading of each phase with the pump working **before and after** overhaul for comparison.

3.1.3. The Contractor shall ensure all necessary valves are isolated and locked out prior to working on this equipment. The Contractor shall ensure the pump is isolated electrically as well, at the main switch board.

3.1.4. The contractor shall removed, electric motor removed from pump and set aside, dismantle the fuel oil transfer pump and lay out the components to be viewed by TCMS Inspector.

3.1.5. The Contractor shall be responsible for scheduling the visits by the Surveyor at times when agreed upon between the Contractor and TCMS, at various stages of the overhaul.

3.1.6. The contractor shall replace the bearings, bushings, gaskets, and seals in the pump. All parts shall be supplied by the Owner.

3.1.7. Only after inspected and accepted by Transport Canada, can the Contractor start rebuilding the pump.

3.1.8. The Contractor shall inform the Chief Engineer when the pump is completely re-assembled / re-installed and ready for testing and shall be run up for a full function test. The pump will be used to transfer fuel and it will be checked for proper rotation, flow, noise, vibrations, and leaks. This shall be witnessed by the Chief Engineer & TCMS. Any defects shall be repaired by the contractor.

3.4 Location

3.2.2. The fuel transfer pump is fitted to the forward bulkhead in the lower engine room at the port side.

3.5 Interferences

3.3.2. Contractor shall be responsible for the identification of all interference items, their temporary removal, storage, and refitting to vessel.

Part 4: PROOF OF PERFORMANCE:

4.2 Inspection

4.1.2. The Contractor shall be responsible for arranging the inspections by TC at various stages of the overhaul as desired by TC.

4.1.3. The components shall be displayed in an orderly / clean fashion and viewed by the Chief Engineer and TCMS Inspector.

4.2 Testing

4.2.1 The pump shall be given a full function test once it is completely rebuilt to determine the correct rotation, flow rate, check for abnormal noise, vibrations, temperatures, or leaks and witnessed by the Chief Engineer & TCMS.

4.3 Certification

4.3.1 N/A

Part 5: DELIVERABLES:

5.2 Drawings/Reports

5.1.1 The Contractor shall provide three copies of a detailed work report in electronic format on the condition of the pump when found, the work performed / parts used and the condition left.

5.4 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

CCGS TELEOST	2013	VERSION 1
Spec item #: E-7	**SPECIFICATION**	TCMSB Field #: N/A
MAIN ENGINE PORT & STBD TURBOCHARGER INSPECTION / OVERHAUL		

Part 1: SCOPE:

1.1 The intent of this specification shall be for the Contractor to have a Caterpillar FSR perform an Inspection on the port and starboard turbo chargers on the 3612 Caterpillar Main Engine.
1.2 The Contractor shall include in their bid to obtain the services of the Caterpillar FSR to open up, inspect, and repair (if needed) the internals of the turbochargers.
1.3 The port and starboard turbochargers shall be dismantled according to the 3612 Caterpillar manual and FSR. The components shall be displayed in an orderly fashion and inspected by the attending TCMS Inspector and Chief Engineer.
1.4 The Contractor shall schedule the visit of TC Inspector, and obtain credits at various stages of the overhaul. At no point shall the Contractor precede without consent from the Chief Engineer & TCMS Inspector.
1.5 The Contractor shall include in their bid $20,000.00 to obtain new parts to rebuild the turbos or send for balancing to be adjusted up or down by PWGSC 1379 action.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1. The Teleost is fitted with a 3612 Caterpillar main engine with two turbochargers. The turbochargers are part # VTC 254-14. The serial # on the main engine is #9C00031.
2.1.2. The overhaul shall be performed by the Caterpillar FSR in accordance with the instructions stated in the 3612 manual.

2.2 Standards

2.2.1. Any and all work performed must be in compliance with the FSR and the turbo manufacturer. Only OEM parts shall be used in the turbo rebuild.
2.2.2. The Ship's ISM Hotwork, Confined Space, Fall Protection, and Lockout must be followed at all times.

2.3 Regulations

2.3.1. The turbocharger overhaul is regulated by Transport Canada Marine Safety and all work performed must be inspected and accepted by the attending Surveyor for credits.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1. The Contractor shall consult with the Chief Engineer prior to commencing work on the main engine to ensure the main engine is locked out and safe to perform work.
3.1.2. The exhaust lagging and shielding shall be removed and any loose items secured prior to opening of the turbo.
3.1.3. The turbochargers can be inspected in place or removed from the ship and carried to the Contractor's facilities for repairs if needed. The Contractor shall provide a separate quote on the removal / transportation / overhaul / re-installation, and a separate quote to complete the inspection in place.

Inspection: check the end play and complete a visual inspection on the impellers and housings.

Overhaul: If the units are out of spec they would require a bearing replacement and a rebalance, however the units would need to go to Montreal to be balanced.

3.1.4. The Contractor must take all the necessary measurements between the specified components according to the Caterpillar manual and compile them in an orderly fashion to be presented to the Chief Engineer at the end.
3.1.5. The Contractor must obtain the FSR and use only OEM parts to rebuild the turbos.
3.1.6. The Contractor must schedule the inspection by Transport Canada, and display all the parts in a clean and orderly fashion.
3.1.7. The owner has one spare turbo which can be installed in the event one is found to be outside manufacturer's specification.
3.1.8. Once inspected and accepted by TCMS, the turbochargers shall be re-assembled and re-installed on the main engine with new bolts and gaskets on the exhaust side, and new o-rings and seals on the air side. New gaskets and seals shall be installed on lubrication and cooling water lines.
3.1.9. All the lagging and shielding shall be reinstalled upon completion of reassembly.
3.1.10. A full function test will be performed on the turbochargers at various loads at the dock and then again at sea trials. The turbos shall be checked and pass inspection / test for vibration, temperature, noise, and boost pressure and be witnessed by the Chief Engineer & TCMS.

3.2 Location

3.2.1. The turbochargers are fitted to the main engine, one on the port side and one on the starboard. The spare turbo is held in fleet technical stores in St. John's.

3.3 Interferences

3.3.1. Contractor shall be responsible for the identification of all 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 performed to the satisfaction of the Chief Engineer, Caterpillar FSR and TCMS Inspector.

4.2 Testing

4.2.1 The function of the turbo shall be tested with the main engine operating at various loads at the dock and then again during a 4 hour continuous sea trial witnessed by the Chief Engineer & TCMS.

4.3 Certification

4.3.1 N/A

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 The Contractor shall provide three copies of a detailed report in electronic format to the Chief Engineer indicating the condition of the turbochargers prior to working, the work performed, all parts used, and the condition as left.

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.5 The intent of this specification shall be for the contractor to remove the Stbd Engine Room Supply/Exhaust Fan Motor for overhaul and to provide the necessary repairs to the fire damper ensuring free movement to close in the event of fire.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.2 MSL 4192-4000

Type: Axial fan, MXR 100-26°-1/1 with fire damper
Flow: 48 M^3/hr
Electric Motor: Bauknecht, 2 speed
RPM 1200 and 600
Voltage 440, KW 11 and 2.7

2.2 Standards

2.2.3 The Ship's ISM Hotwork, Confined Space Entry, Fall Protection, and Lockouts shall be adhered to at all times.

2.2.4 All Hot Work shall be completed in accordance with Coast Guard Fleet Safety Manual Section 7.D.11 and 7.D.11 (N). The Contractor shall be currently certified by the Canadian Welding Bureau (CWB) in accordance with CWB 47.1 latest revision Division I, II or III at the time of bid closing.

2.3 Regulations

2.3.1 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 Ships.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 The Contractor shall Lock-Out and disconnect the power supply for the Stbd Supply Fan Motor, remove the grating and brackets over top of fan intake to gain access to fan & motor. The fan and motor shall be removed from casing and transported to contractors facility for repairs. Contractor shall seal the inlet to the Engine Room to prevent ingress of debris from cleaning and grinding.

3.1.2 The fan and motor shall be disassembled, cleaned, inspected and overhaulled. The motor housings shall be cleaned of rust and loose paint scales and repainted. The contractor shall Meggar the electric motor before it is re-installed. The Meggar Readings shall be within manufacturer's specifications. The motor bearings shall be replaced with new contractor supplied OEM bearings and the motor reassembled with fan and then dynamically balanced and tested as operationally correct.

3.1.3 The contractor shall remove the fire damper, including the shaft and operating lever, clean from rust and repaint. The contractor shall remove existing bushings that support the damper shaft, fabricate and install new bushings. There are (3) three bushings. (2) Two of the bushings are on the fan casing and one (1) is located on the compartment bulkhead which the extension shaft extends through. The bushing shall be bronze and shall be fitted with a greasing arrangement.

3.1.4 The internal surface area of the fan casing shall be cleaned from all rust and loose paint scales and painted with one coat of Interprime and one coat of Interlac CL Finish, white. Total area 15 square meters.

3.1.5 The contractor shall reassemble the fire damper and shafts. The damper shall be tested to ensure it closes freely and completely. The fan motor shall be re-installed in the casing and all wiring , brackets and grating reinstalled. The fan shall be test run and proven operationally correct in both directions (supply / exhaust).

3.1.6 The contractor shall supply all parts and materials to perform specified work. The contractor shall also include an allowance of $2500.00 for purchase of electric motor bearings, machining parts and repairs to fan blades. Allowance shall be adjusted up or down by PWGSC 1379 action.

3.2 Location

3.2.1 Located at Fr. 14 to 16, Main Deck Stbd.

3.3 Interferences

3.3.3 This work should be coordinated with item H-18 (Painting the inside of the Stbd Engine Room Supply Casing).

3.3.4 The contractor shall be responsible for the identification of all interference items, their temporary removal, storage, and refitting to the vessel.

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

4.1.2 Work to be completed to the satisfaction of the Chief Engineer.

4.2 Testing

4.2.1 Fan to be functionally tested in both directions for 30 minutes to determine any defects. Any defects to be corrected immediately by the contractor at the contractor's expense.

4.3 Certification

4.3.1 Contractor to provide Chief Engineer with Megger Readings recorded prior to disassembly and after all work completed.

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 Contractor to provide 3 copies of a service report in electronic format for overhaul of electric motor and balancing of fan.

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A

Part 1: SCOPE:

1.1 The intent of this specification shall be for the contractor to remove the old seawater supply manifold to the various locations in the wet lab, fabricate an exact copy (same as original), and re-install in the same location using new contractor supplied pipe, elbows, flanges, couplings / seals, fasteners and gaskets. The manifold is 4" schedule 40 pipe, 20' long, with an eight bolt flange on the port side and welded on the starboard end. It has 9 flanged connections, one T and three dresser couplings. The flange can be disconnected on the port side, and will have to be cut on the starboard side. The contractor shall cut the pipe on the starboard end, in a location to allow complete access all around the circumference to weld the new pipe at its previous location.

1.2 In addition to the manifold, the contractor shall replace the 2" schedule 40 line supplying the overboard discharge. It is 10' long with 6, 90 degree elbows, one 45 degree elbow with a 4 bolt flange on one end and a dresser coupling on the other.

Part 2: REFERENCES:

2.1 Guidance Drawings/Nameplate Data

2.1.1 The contractor can use the following drawings: Wet Lab Arrangement 4192-1087, Fire and Deck Wash 4192-2121, and General Arrangement 4192-4000.

2.2 Standards

2.2.1 All work shall be completed in compliance with the latest standards relating to ship repair. The new pipe will be subjected to a water pressure test from the processing water pump and must be leak free.

2.2.2 The ship's ISM Hotwork, Confined Space Entry, Fall Protection, and Lock-out must be adhered to at all times.

2.2.3 All Hot Work shall be completed in accordance with Coast Guard Fleet Safety Manual Section 7.D.11 and 7.D.11 (N). The Contractor shall be currently certified by the Canadian Welding Bureau (CWB) in accordance with CWB 47.1 latest revision Division I, II or III at the time of bid closing

2.3 Regulations

2.3.1 This ship is regulated by Transport Canada and all work must be completed to the satisfaction of the attending surveyor.

2.3.2 Welding shall be in accordance with the Canadian Coast Guard Welding Specifications for Ferrous Materials, Revision 4. (TP6151 E)
The Contractor shall be currently certified by the Canadian Welding Bureau (CWB) in accordance with CWB 47.1 latest revision Division I, II or III at the time of bid closing.

2.4 Owner Furnished Equipment

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

Part 3: TECHNICAL DESCRIPTION:

3.1 General

3.1.1 The contractor must ensure the supply pumps are isolated and locked out prior to commencing the removal of the specified pipe.

3.1.2 The pipe shall be cut off at the starboard end in a manner to enable complete welding of the new pipe.

3.1.3 All the flanges, fittings and brackets shall be disconnected and the old pipe removed. The dresser couplings can be re-used with contractor supplied new seals.

3.1.4 The contractor shall also remove the 2” schedule 40 pipe that leads from the manifold to the overboard pipe. This consists of a 4 bolt flange at the manifold end, and a dresser coupling at the other.

3.1.5 The sections of the pipes are to be fabricated at the contractor’s facility and returned to the ship when fabricated.

3.1.6 The contractor shall apply two coats of metal primer on all new and heat affected pipes during this work.

3.1.7 The contractor shall install with all new, contractor supplied gaskets and fasteners.

3.1.8 The pipe has to be cut off at this end in a manner to allow re-welding.

3.1.9  The manifold can be disconnected on this end through the flange.

3.1.10  This shows the dresser coupling.

3.1.11  This shows the manifold as it sits today.

3.2 Location

3.2.1 The specified pipes are situated in the wet lab on the lower deck, at frame 18, and it runs port and starboard.

3.3 Interferences

3.3.1 The contractor shall be responsible for the identification of all interference items, their temporary removal, storage, and refitting to the vessel.

Part 4: PROOF OF PERFORMANCE:

4.1 Inspection

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

4.2 Testing

4.2.1 The new pipes and connections shall be tested through the use of the processing pumps and must be leak free.

4.3 Certification

4.3.1 All welders must be CWB certified.

Part 5: DELIVERABLES:

5.1 Drawings/Reports

5.1.1 N/A

5.2 Training

5.2.1 N/A

5.3 Manuals

5.3.1 N/A