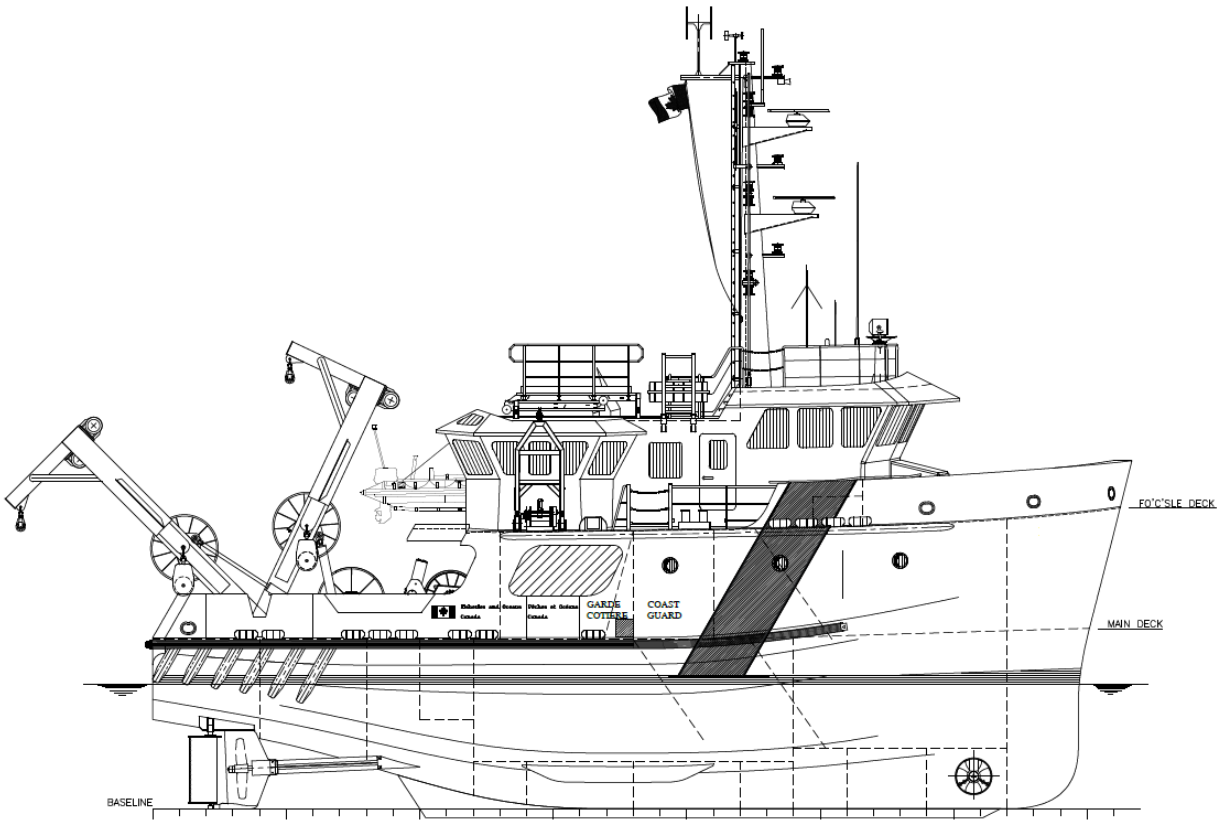
CCGS Vladykov

Annual Refit, Drydocking and Storage 2014/2015



Storage:December 17, 2014 – March 3, 2015

Refit: March 3, 2015 – March 31, 2015

Contents

PREAMBLE

1. INTENT

The intent of this specification shall describe the necessary work involved in carrying out the ship's Annual Refit and Storage. The total storage for this vessel will be from December 17, 2014 to March 31, 2015 and includes a refit period from March 3, 2015 to March 31, 2015. 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 BUREAU VERITAS (BV) Inspector. Unless otherwise specifically stated, the Owner's Representative is the Chief Engineer.

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. The surface preparation, ambient limitations and coating applications shall be as per the manufacturer's instructions and specifications.

3. TESTING AND RECORDS

All test results, calibrations, measurements and readings are to be recorded. All tests are to be witnessed by the Inspection Authority, Technical Authority and where required, BV Inspector. In the event that a Class Inspector is required, CG Technical Authority will make necessary arrangements. The recorded test results, calibrations, measurements and readings from the entire refit specification shall be provided in 3 typewritten bound reports on 8.5" X 11" paper. The bound reports shall be tabbed as per table of contents in the refit specification. The bound reports shall be provided to the Chief Engineer prior to the end of refit.

The Contractor shall also provide reports/measurements/readings per individual specification item within the timeline indicated to the Chief Engineer.

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 shall include all of the necessary labor and equipment required for the erection of access staging, rigging, lighting, tugs, pilotage, necessary cranage and line handling.

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.

7. REMOVALS

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

8. EXPOSURE AND PROTECTION OF EQUIPMENT

The contractor shall provide 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.

9. LIGHTING AND VENTILATION

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

10. CLEANLINESS

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

affected by this refit. The contractor shall dispose of any and all oil and water residue, which accumulates in the machinery space bilges as a result of any refit work detailed in this specification.

11. ASBESTOS

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

12. ENTRY INTO ENCLOSED SPACES

The contractor shall abide by the Coast Guard Enclosed Space Entry Policy. The policy is listed in the Coast Guard's Safety Management System, section 7.D.9 and section 7.D.9 (N). Entry certificates shall clearly state the type of work permitted and shall be renewed as required by the regulations. Additional copies of these certificates shall be posted in conspicuous locations for the information of ship and contractor personnel.

A fire zone shall be established and naked lights shall not be used within this zone until "gas-free" certification has been issued.

The Contractor is to ensure that any work carried out in confined spaces as defined by the Canada Labor Code complies fully with all provisions of the code.

A number of spaces onboard the vessel are designated as Enclosed Spaces; these spaces are to be entered only under safe and controlled circumstances. The Contractor shall have in place an Enclosed Space Entry Permit system, equal to or better than the procedure contained in the Coast Guard's Safety Management System, section 7.D.9. Ship's breathing apparatus and EEBD's are not to be used except in an emergency.

13. 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.

14. HOTWORK

Any item of work involving the use of heat 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 hotwork. 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 shall not be used except in an emergency. The Contractor shall abide by the Coast Guard Hotwork Policy. The policy is listed in the Coast Guard's Safety Management System , section 7.D.11 and section 7.D.11 (N). The contractor shall be responsible to ensure the contractor's personnel including any subcontractors shall follow the policy.

15. LOCKOUT AND TAGOUT PROCEDURES

1. The Contractor shall be responsible to protect persons working onboard 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

2. The contractor, under the supervision of the Chief Engineer shall be responsible for the Lockout and Tagout of equipment and systems listed in the specification.

3. The Contractor shall supply and install all locks and tags and shall complete the Lockout Tagout Log sheet provided by the Vessel.

4. 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 steelwork that will not be on the underwater wetted surface of the ship's hull is to be protected with two coats of Contractor supplied primer. Unless otherwise stated in the individual specification item, the primer is to be Matchless Red Oxide Alkyd Primer 713. The paint is to be applied as per the manufacturer's instructions on their respective product data sheets. Finish coats are described in individual specification items.

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 shipyard personnel will be working. The contractor shall inform shipyard workers of this policy and ensure that it is complied with.

19. RESTRICTED AREAS

The following areas are out of bounds to shipyard personnel except to perform work as required by the specifications: all cabins, offices, Wheelhouse, public washrooms, cafeteria, dining room, lab spaces and any other area identified by the Owners Representative at time of refit.

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.

Sign off and acceptance of jobs will not occur until any and all drawings are updated to the satisfaction of the Owner's representative.

22. TRANSDUCERS

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

23. OWNER'S REPRESENTATIVE

Throughout this document, there is made reference to the Owner's Representative. For the purpose of this document, the Owner's representative is defined as the Chief Engineer of the Vessel.

24. Regulatory Authority Inspections

The Contractor shall confirm a schedule of inspections with the CG Vessel Maintenance Manager (VMM) for all work described in this specification at time of bid closing. The Contractor shall be responsible for calling them when inspections are required and for ensuring the work is credited by the regulatory authority in the Chief Engineer's 'Hull and Machinery Survey Book'.

The contractor shall ensure the Chief Engineer is informed when the regulating authority is onsite such that the Chief Engineer can witness the inspections by the regulating authority.

Notwithstanding any errors, omissions, discrepancies, duplication or lack of clarity in these project requirements, it shall be the responsibility of the Contractor to ensure that the execution of the work specified herein is to the satisfaction of the Chief Engineer, VMM, PWGSC and Class Inspector.

25. Waste Oil Products

Disposal of waste oil products shall be carried out by the Contractor, or subcontractor, who has been licensed by provincial authorities for the disposal of petroleum products. Copies of certificates must be produced upon request. This must be in accordance with the Coast Guard Policy for Handling Fuel, Oil, and Waste Oil Products, which is part of the Fleet Safety Manual, section 7.C.3. A copy of which is in the attached safety annex.

26. WHMIS

The contractor shall provide current MSDS sheets for any WHMIS-controlled products used onboard or around the vessel at the start of the work period before the products are used. This includes at the minimum MSDS sheets for any solvents, cleaners, chemicals, coatings and blasting grits to be used. 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.

27. SAFETY ANNEX

The Contractor shall follow the Coast Guard Policies as outlined in the attached Safety Annex. This Annex contains excerpts from the Fisheries and Oceans Canada, Canadian Coast Guard Fleet Safety Manual (DFO 5737) and deals with contractor responsibilities for items such as Hot Work, Confined Space Entry, Diving, Diving Operations and Dry-docking.

SHIP'S PARTICULARS

Length O.A.	25.0 Metres
Beam Moulded	9.2 Metres
Beam Extreme	9.5 Metres
Depth Moulded	3.8 Metres
Navigational Draft	3.6 Metres
Lightship Displacement	259.5 T
Year Built	2012

Rigging Weights

Propellor Shaft	363 kg (800 lbs) Length 5.67 meters
Propeller	215 kg (473 kg)
Anchor (Complete)	315 kg (694 lbs)
Rudder and Stock	775kg (1709 lbs)

H-01 Storage

Part 1 – SCOPE

1.1.1 The intent of this specification shall be for the contractor to provide quotes on storage, shore power and security from Dec 17th, 2014 to March 3rd, 2015. All drydocking, blocking, hull cleaning, relaunching and other items as noted shall be quoted on in additional spec items. Exact dates may be adjusted due to operational requirements of the vessel and shall be adjusted at by PWGSC 1379 action at daily rates provided by contractor.

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

Length O.A.	25.0 Metres
Beam Moulded	9.2 Metres
Beam Extreme	9.5 Metres
Depth Moulded	3.8 Metres
Navigational Draft	3.6 Metres
Lightship Displacement	259.5 T
Year Built	2012

2.2 Standards

2.2.1 N/A

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The contractor shall provide services as described below from Dec 17th, 2014 to March 3, 2015. Total days in storage 77 days. Exact dates may be adjusted due to operational

requirements of the vessel and shall be adjusted at by PWGSC 1379 action at daily rates provided by contractor.

3.1.2 Contractor shall dock and undock vessel as per Refit Spec item HD-01 Drydocking.

3.1.3 Crew will be on board when putting vessel on and off dock.

3.1.4 The Contractor shall be responsible if required for the safe transfer of the ship from its pre-docking berth or location onto its docking blocks. During docking, radio contact is to be maintained between the vessel's Commanding Officer and the Contractor's Docking Officer. The Contractor is to include in his bid, tug and/or pilotage services as required.

3.1.5 Contractor shall clean underwater hull as per Refit Spec item HD-02 Hull Cleaning and Painting.

3.1.6 Prior to commencing hydroblasting, all hull mounted equipment and openings are to be fully protected.

3.1.7 Prior to flooding the dock the contractor shall re-check the security of the keel/bilge blocks and docking plugs in the presence of the owner's representative. The condition of the vessel shall be the same as at the time of docking.

3.1.8 At undocking, all tanks to be refilled to obtain same draft and trim as at docking, and condition agreed by the Docking Master, the ship's Captain and the Chief Engineer.

3.1.9 Contractor shall open up Sea Chests as per Refit Spec item HD-03.

3.1.10 The Contractor is not to remove or transfer any tank contents without first discussing same with the Chief Engineer.

3.1.11 Contractor to supply services during storage as per Refit Spec Preamble

3.1.12 Contractor shall bid on below Storage Items separate from Refit Items portion of contract:

3.1.12.1 Contractor shall supply and hook up shore power from December 17, 2014 to March 3rd, 2014. Shore power required 440 volts three phase 100amp.

3.1.12.2 Contractor to bid on supplying 50,000 KWHS of power and quote on per KWH. Actual cost shall be adjusted up or down by PWGSC 1379 action according to final meter reading.

3.1.12.3 Contractor shall supply and install a separate meter for the Vladykov and shall record and submit bi-weekly readings to the Vessel Maintenance Manager by email.

3.1.12.4 Contractor shall supply shore power cable.

3.1.12.5 Lay up to include security 24hrs a day 7 days a week. This means that a Shipyard employee has a cell phone that will tie into the Ship own security system. That in event an alarm goes off on board the vessel this alarm will dial to the shipyard's employee so that they can go on board the vessel to investigate. Types of alarms that are incorporated into the security system hatches and doors opening, fire detection systems, motion sensors, bilge alarm, temperature sensing etc.

3.1.12.6 In the event alarm goes off the contact person with Canadian Coast Guard is Geoff Stewart, at cell 709-330-0073 or email geoffrey.stewart@dfo-mpo.gc.ca

3.1.12.7 Shipyard personal will be familiarized with the vessel's security system.

3.1.12.8 Security or shipyards personal to keep a log of temperature readings twice a day in five areas: steering gear compartment, engine room, fwd lower cabins, mess and wheelhouse. Contractor shall contact Geoff Stewart at 709-330-0073 or email geoffrey.stewart@dfo-mpo.gc.ca if the temperature of any compartment goes to down to 7 or rises to 40 degrees Celsius.

3.1.13 The crew will be on board for 7 days winterizing the vessel starting December 17, 2014.

3.2 Location

3.2.1 N/A

3.3 Interference

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

Part 4 – PROOF OF PERFORMANCE

4.1 Inspection

4.1.1 All work shall be completed to the satisfaction of the Chief Engineer, VMM, and if required the Class Inspector.

4.2 Testing

4.2.1 N/A

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 Contractor shall deliver two (2) hard copies of all checklists and reports to the Chief Engineer and one (1) electronic copy of all reports to VMM upon completion of refit.

5.1.2 Contractor shall submit electronically, bi-weekly power meter readings to VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-02 Production Chart

Part 1 – SCOPE

1.1 The intent of this specification shall be to give the owner's representatives an accurate timeline 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 The Contractor shall supply all materials, equipment and parts required to perform the specified work unless otherwise stated.

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The successful Contractor shall supply the Chief Engineer with three (3) bound hard 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. An electronic version shall be forwarded to the Vessel Maintenance Manager (VMM) - Geoffrey.Stewart@dfo-mpo.gc.ca. The Contractor shall also forward an electronic copy of the Production Chart to the Contracting Authority.

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, VMM and PWGSC. Every effort shall be made to prevent the vessel from delay in completing the refit in the time frame 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.

Part 4 – PROOF OF PERFORMANCE

4.1 Inspection

4.1.1 All work shall be completed to the satisfaction of the Chief Engineer, VMM, PWGSC and if required the Class Inspector.

4.2 Testing

4.2.1 N/A

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 The successful Contractor shall supply the Chief Engineer with three (3) bound hard 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. An electronic version shall be forwarded to the Vessel Maintenance Manager (VMM) - Geoffrey.Stewart@dfo-mpo.gc.ca. The Contractor shall also forward an electronic copy of the Production Chart to the Contracting Authority.

5.1.2 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 Production Meeting. The VMM shall also be forwarded an electronic copy of the weekly update prior to the Production Meeting.

H-03 Services

Part 1 – SCOPE

1.2 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 refit.

1.3 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 Data

2.1.1 ISV25 – 30000RMM9 - General Arrangement Drawing

2.2 Standards

2.2.1 The following Coast Guard Standards and/or Technical Bulletins must be followed while executing this specification. Copies of these standards and bulletins can be obtained from the CCG Technical Authority.

2.2.1.1 Canadian Coast Guard Fleet Safety Manual (DFO 5737)

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The Contractor shall quote a global price and daily rates for all services supplied to the vessel during the contracted period.

3.1.2 The Contractor shall quote on supplying the following services:

3.1.2.1 Readings and Reports – The Contractor shall collect and bind all readings and reports in a booklet form. Two (2) bound copies shall be delivered to the Chief Engineer prior to the end of the contracted refit period. Contractor shall deliver 1 electronic copy of all reports/certs to VMM prior to the end of the refit period.

3.1.2.2 Electrical Power – Shore power facilities shall be supplied to the ship using a single 100 amp source using Contractors cables and fittings. Ship requires 1 x 100 amperes x 440VAC x 60 Hz x 3-phase power source for connection to the ships shore power transformer. Contractor shall quote on supplying 600 kW-hours per day. The Contractor shall quote per kW hour for adjustment purposes by PWGSC 1379 action based on actual amount consumed.

Kilowatt-hour meter readings shall be taken from the Contractor supplied meter. The meter readings shall be recorded by the Contractor and the Chief Engineer at the time of connection and disconnection. Readings shall also be supplied to the VMM on a Bi-Weekly basis.

3.1.2.3 Fire Main – Water shall be available to the vessels fire main at a pressure of 550 kPa (80 psi) and be available 24 hours per day. Supply line shall be fitted with an isolating valve to ensure fire main remains dry unless needed and a pressure-regulating valve (with pressure gauge) which shall be located on the ship connected to the ships international shore connection. Supply line from hydrant to vessel shall remain dry to prevent freezing.

3.1.2.4 Gangways – The Contractor shall supply and erect a gangway, complete with safety nets, guardrails, and adequate lighting to the satisfaction of the Commanding Officer. Gangway shall land on aft deck. Gangways shall be safe, well lit and structurally suitable for the passage of shipyard workers and ship's crew. Contractor shall maintain gangways in a safe condition throughout the duration of the dry-docking. Ships gangway shall not be used during the refit/dry-dock period except with the approval of the Commanding Officer and at no liability to CCG. Any movement of the gangways required by Contractor shall be at the expense of the Contractor.

3.1.2.5 Washrooms – Contractor shall provide 1 washroom ashore at their facility for the vessels crew usage. This washroom shall be serviced regularly.

3.1.2.6 Garbage Removal – A suitable garbage container with cover shall be provided for the duration of the refit. Garbage containers may be used by Coast Guard and Contractor for the disposal of debris etc. These containers shall be emptied on a regular basis.

3.1.2.7 Berthing – Berthing and mooring facilities shall be suitable for a vessel of this size and shall be to the satisfaction of the Commanding Officer.

During the contract period, if the ship is not in the dry-dock, the ship shall be berthed at the Contractor's wharf at a safe and secure berth with adequate water at extreme low tide to ensure the vessel will not touch bottom. Contractor is responsible for all movements of the vessel during the contract period, including arrangements and costs for line handlers, tugs, pilots, etc.

3.1.2.8 Cleaning – Contractor shall ensure all spaces, compartments and areas of the ship, external and internal, are left in an "as clean condition as found".

Cost of removing dirt, debris and cleaning up work areas to the "as clean a condition as found" shall be included in each specification item.

3.1.2.9 Oily Bilge Water – Contractor shall quote on removing $3m^3$ of oily water from the ships bilge and tanks at the start of the storage. The quotation shall include the cost of cranage, pumping, trucking and disposal of oily mixture. Contractor shall provide the name of the firm contracted for the pumping and disposal of the waste oil. Contractor shall quote the cost of disposal for each additional $1m^3$ for adjustment purposes by PWGSC 1379 action. Contractor will advise the Chief Engineer when oily bilge water shall be pumped out and a copy of the shipping manifest, indicating volume of oily water removed, shall be given to the Chief Engineer.

3.1.2.10 Cranage - Contractor shall bid on supplying general services of a dockside crane, driver and rigger for 20 hours during drydock period as and when requested by the Chief Engineer. Contractor shall quote an hourly rate for adjustment purposes by 1379 action.

3.1.2.11 Shore Facility – Contractor shall make available to ship's crew a washroom in close proximity to the vessel. The washroom shall be cleaned daily.

3.2 Location

3.2.1 N/A

3.3 Interference

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

Part 4 – PROOF OF PERFORMANCE

4.1 Inspection

4.1.1 All work shall be completed to the satisfaction of the Chief Engineer, VMM, and if required the Class Inspector.

4.2 Testing

4.2.1 N/A

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 The Contractor shall collect and bind all readings and reports in a booklet form. Two (2) bound copies shall be delivered to the Chief Engineer prior to the end of the contracted refit period. Contractor shall deliver 1 electronic copy of all reports/certs to VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-04 Liferaft Servicing

Part 1 – SCOPE

1.1 The Contractor shall remove and transport the ships liferafts and hydrostatic releases to and from an authorized service center for servicing.

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

2.4.2 2 X 16 Person “Surviva” Liferaft – Wheelhouse Top (Port and Stbd)

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The Contractors quote shall include the removal of the vessels two (2) inflatable liferafts and releases from the ship and transport them to the OEM service center for annual inspection. Upon return of the rafts they are to be replaced onboard the vessel in their respective locations and secured.

3.1.2 An allowance of $800 per liferaft shall be quoted for replacement of survival equipment for a total allowance of $1600 for this specification item; this cost shall be adjusted by PWGSC 1379 action on proof of invoice.

3.2 Location

3.2.1 1 X 16 Person "Surviva" Liferaft – Wheelhouse Top (S) – B04199

1 X 16 Person "Surviva" Liferaft – Wheelhouse Top (P) – B04198

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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/or VMM.

4.2 Testing

4.2.1 N/A

4.3 Certification

4.3.1 Contractor shall deliver 2 hard copies of Service Certificates and original Service Certificates to Chief Engineer. Contractor shall deliver 1 electronic copy of all reports/certs to VMM.

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 Contractor shall deliver two (2) hard copies of all checklists and reports to the Chief Engineer outlining any work and/or modifications required. Contractor shall deliver one (1) electronic copy of all reports to VMM.

5.2 Spares

5.2.1 N/A

H-05 Ships Portable Fire Extinguishers

Part 1 – SCOPE

1.1 The Contractor shall remove and reinstall all the ships portable fire extinguishers and transport them to an authorized service center for annual servicing and testing. If possible the authorized rep may travel to vessel and complete inspections onsite.

1.2 This work shall be carried out in conjunction with spec items:

1.2.1 H-11 Fire Detection System Annual Inspection

1.2.1 H-14 Fixed Fire Fighting System Annual Inspection

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 See list of ships extinguishers in Technical Description.

2.1.2 ISV25 – 3000RMM9 – General Arrangement

2.2 Standards

2.2.1 N/A

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The portable extinguishers are to have an annual inspection. All extinguishers are to be inspected and serviced by a qualified representative.

3.1.2 The Contractor shall ensure that the extinguishers are removed so that the total ashore at any one time does not exceed one-third the total of the extinguishers onboard. The Chief Engineer will determine which extinguishers go ashore at any given time.

3.1.3 Upon completion of servicing ashore, the Contractor is to transport all extinguishers back onboard the ship and is to install them in their original positions as directed by the Chief Engineer.

3.2 Location

3.2.1 Listing of Extinguisher Types onboard:

#	LOCATION	TYPE	S/N	D.O.M	6 YEAR DUE	HYDRO DUE	COMMENTS
1	Bridge	CO^2	W782996	2011	---	2016	
2	E/R Fwd Bulkhead	CO^2	W782998	2011	---	2016	
3	E/R On Fwd Stairs	Foam	641063	2011	---	2016	
4	Lower Accommodations	Foam	641060	2011	---	2016	
5	Mess	Foam	641059	2011	---	2016	
6	Galley	Foam	641064	2011	---	2016	
7	E/R Aft Control Console	Foam	641053	2011	---	2016	
8	E/R After Bulkhead	Foam	641058	2011	---	2016	
9	Cargo hold Fwd Bulkhead	DC	109807	2011	2017	2023	
10	Aux. Mach. Room	DC	109888	2011	2017	2023	
SP	Cargo Hold	Foam	641055	2011	---	2016	
SP	Cargo Hold	Foam	641057	2011	---	2016	
***	Wet Lab	CO^2	W783006	2011	---	2016	
SP	Cargo Hold	CO^2	W782990	2011	---	2016	
SP	Foc'sle (Port side compartment)	DC	AW-109877	2011	2017	2023	
SP	Foc'sle (Port side Compartment)	DC	AW-109785	2011	2017	2023	
?	FRC	DC	848782	2010	2016	2022	

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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 Commanding Officer, Chief Engineer and/or VMM.

4.2 Testing

4.2.1 Testing of all extinguishers to be within Bureau Veritas Classification Society Regulations.

4.3 Certification

4.3.1 Contractor shall deliver 2 hard copies of Service Certificates and original Service Certificates to Chief Engineer. Contractor shall deliver 1 electronic copy of all reports/certs to VMM.

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 Contractor shall deliver two (2) hard copies of all checklists and reports to Chief Engineer outlining any work and/or modifications required. Contractor shall deliver one (1) electronic copy of all reports to VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-06 Cold Store Compressor Relocation

Part 1 – SCOPE

1.1 The Contractor shall move existing cold store compressor from Dry Stores in the Galley to Boson Stores.

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 N/A

2.2 Standards

2.2.1 The following Coast Guard Standards and/or Technical Bulletins must be followed while executing this specification. Copies of these standards and bulletins can be obtained from the CCG Technical Authority.

2.2.1.1 Canadian Coast Guard Fleet Safety Manual (DFO 5737)

2.2.1.2 Coast Guard ISM Lockout/Tagout

2.2.1.3 Coast Guard ISM Hotwork procedures

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 Contractor shall properly disconnect both the refrigerant and electrical connections from the compressor located in the dry stores.

3.1.2 Contractor shall remove the compressor and condenser from the dry stores and relocate into the Bosons stores compartment. The compressor unit shall be fitted to existing shelving directly above the existing freezer compressor.

3.1.3 Compressor unit shall be fitted to ensure the condenser is facing inboard for ease of cleaning. The compressor unit shall also be fitted as close as possible to the aft bulkhead to minimize loss of shelf space. Minor modifications may be required to existing shelving to allow compressor to secure properly.

3.1.4 Contractor shall install a new electrical cable from panel P201P Breaker 1/3, Located on forward bulkhead in Crews Mess to the compressor in its new location in the Boson Stores. There is an Electrical Transit, P22, located on forward bulkhead in dry stores leading to the Bosun stores compartment. Power to this unit is 220V AC with 15amp breaker.

3.1.5 Contractor shall modify existing two refrigeration lines (supply and return) in order to be connected to the compressor in its new location. Contractor shall supply and install two Class Society Approved bulkhead penetrations in the bulkhead between the Bosuns stores and the dry stores to allow for passage of refrigeration lines. One line is ½ inch Copper, second is ¼ inch copper.

3.1.6 Contractor shall refill compressor system with R-134A refrigerant prior to starting system.

3.1.7 Contractor shall perform leak testing on all connections in system to prove no leaks are present.

3.2 Location

3.2.1 Dry Stores

3.2.2 Bosuns Stores

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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/or VMM.

4.2 Testing

4.2.1 Compressor unit must be ran-up and cold room shall be brought down to normal operating temperatures for 48 hours to prove everything is functional.

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 N/A

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-07 Bilge/Sludge System Piping Alterations

Part 1 – SCOPE

1.1 The contractor shall modify existing bilge/sludge system to allow the engine room bilges to be pumped by the oily water pump directly. The current pumping system is fitted with a hose reel and wand. The intent is to replace the hose reel and wand with a hard piped system.

1.2 This work shall be carried out in conjunction with the following spec items:

1.2.1 H-08 Bilge Cleaning

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 ISV25-75000RMM4 - Sludge-Oily Water Diagram

ISV25-30000RMM9 - General Arrangement

Vladykov – Oily Water Retention System Modification Drawing

Vladykov – Oily Water Retention System Modification. Typical Spool Piece Detail

2.2 Standards

2.2.1 N/A

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 Contractor shall use included General Arrangement, Vladykov – Oily Water Retention System Modification Drawing and Vladykov – Oily Water Retention System Modification - Typical Spool Piece Detail drawing to determine location of new bilge suctions.

3.1.2 The contractor shall disconnect the hose from the steering gear space and dispose of hose and reel. The one in the engine room will be left as a backup suction.

3.1.3 The Contractor shall install 5 new bilge suctions as indicated by included drawing. Each suction shall be installed as per included drawing and include SDNR valve and mud box.

3.1.4 Contractor shall use existing piping throughout engine room where possible.

3.1.5 Contractor shall use included drawings for determining sizes, materials and quantity of materials required.

3.1.6 Exact location of bilge suctions shall be determined by Chief Engineer prior to starting.

3.2 Location

3.2.1 1 Suction to Port Engine room Bilge,

1 suction to Starboard Engine Room Bilge

1 suction to Forward Cargo Hold

1 suction to Port Side of Midships in Auxiliary Machinery Compartment

1 suction to Portside of Midships in Steering Gear Compartment

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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/or VMM.

4.2 Testing

4.2.1 Contractor shall prove each bilge suction works properly by removing a minimum of 50L of water from each bilge suction. Operation and testing must be witnessed and approved by Chief Engineer.

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 N/A

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-08 Bilge Cleaning

Part 1 – SCOPE

1.1 The intent of this specification shall be to carry out cleaning of the engine room, cargo hold, aux machinery space and steering gear bilges. Contractor shall clean the tank top, bilges, piping, machinery seats, and frames below deck plates. The Contractor shall physically clean the vessels bilges of all debris and fluids.

1.2 This work shall be carried out in conjunction with the following spec items:

1.2.1 H-07 Bilge System Alterations.

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 ISV25 – 30000RMM9 – General Arrangement Drawing

2.2 Standards

2.2.1 N/A

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The Contractor shall be aware that this spec item involves lifting and replacing deck plates and gratings as required. All debris and liquids shall be removed by means of high pressure water spray, degreasing solvent and vacuum hose service. Areas that are hard to access with a vacuum hose shall be thoroughly washed out with high pressure spray to an area that is accessible. The above areas shall be thoroughly cleaned to the finished surface. Any debris taken up from the bilges shall be removed ashore daily.

3.1.2 Any chemicals used for cleaning are to be non-flammable and the vapours are non-toxic. The chemicals shall be Oily Water Separator compatible. A copy of the WHIMIS MSDS shall be provided to the Chief Engineer before the work commences.

3.1.3 Care is to be taken to keep overspray to a minimum from areas and equipment above the deck plates. Such overspray shall be wiped clean upon completion of all work to the satisfaction of the Chief Engineer.

3.1.4 All liquid and debris remaining as a result from the cleaning shall be removed from the vessel. Ships systems and equipment shall not be used to dispose of any liquids and/or sludge. All bilges shall be shown to be clean upon completion of all work. Bilge float alarms shall be proven operational.

3.1.5 The Contractor shall supply all material and equipment to perform the specified work, including the services of a vacuum truck.

3.1.6 All bilge cleaning shall be done with the Chief Engineer or delegate present.

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

3.2 Location

3.2.1 Engine Room – Frame 14 to Frame 21

3.2.2 Cargo Hold/Workshop – Frame 8 to Frame 14

3.2.3 Aux Machinery Space – Frame 4 to Frame 8

3.2.4 Steering Gear – Frame 0 to Frame 4

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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/or VMM.

4.2 Testing

4.2.1 N/A

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 N/A

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-09 Anchors, Chain and Cable

Part 1 – SCOPE

1.1 The intent of this specification shall be to remove anchor, cable and chain for inspection for Bureau Veritas (BV) and to repair as required. Any repairs will be covered by PWGSC 1379 action.

1.2 This work shall be carried out in conjunction with the following spec items:

1.2.1 H-22 Anchor Windlass

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 ISV25 – 40500RMM6 - Anchor and Mooring Arrangement Drawing

2.1.2 Anchor Winch – HSF 2226 Owner's Manual

2.2 Standards

2.2.1 N/A

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The contractor, with assistance from ship's crew, shall remove the anchor, cable and chain from the vessel while still in the water. Anchor, cable and chain shall be removed from ship to dock with assistance of contractor supplied crane.

3.1.2 The contractor shall disconnect the "bitter end" of the cable from the winch and the cable from the chain. The anchor and chain shall be flaked out in an area where

inspection can take place during refit period. Cable shall be spooled onto contractor supplied cable reel and stored in an accessible area for viewing during refit. Cable shall be removed from reel prior to viewing by Class Inspector and spooled back on reel upon completion of inspection.

3.1.3 Approximate weights and measurements of anchor, cable and chain are:

3.1.2.1 Anchor - 360kg

3.1.2.2 Chain – 19 mm diameter and 30 meter in length

3.1.2.3 Cable – 19mm diameter galvanized 6x19 cable and 140 meter in length

3.1.4 The contractor shall remove all scale and rust from anchor, chain and cables using high pressure fresh water wash (approx. 5000psi) prior to inspection by Class Inspector.

After cleaning, the anchor, cable and chain shall be inspected by BV and Owner's Representative.

3.1.5 Contactors shall supply and install new certified shackles as listed below:

3.1.5.1 1" Kenter Joining Shackle

3.1.5.2 Replacement swivel – same dimensions and material as currently installed

3.1.5.3 2 Replacement D shackles - same dimensions and material as currently installed

3.1.6 The cable and chain shall be marked at 27.43m (90ft) intervals measured from the anchor connection. Marks must be made using a piece of three strand rope reeved through the cable.

3.1.7 The Contractor and Chief Engineer shall inspect the anchor for damage or worn galvanized coatings. Any repairs required shall be adjusted by PWGSC 1379 action.

3.1.8 Any defects found in the anchor, chain or cable shall be immediately brought to the attention of the Owner's Representative. Random links of chain shall be measured at the throat to check amount of wastage/wear. Original diameter of chain is 19mm. A typewritten copy of the measurements shall be given to the Chief Engineer and an electronic copy shall be forwarded to the VMM. Report to indicate what links where measured, measurements and any observations noted.

3.1.9 Upon re-launching of vessel, contractor shall with assistance of ship's crew, reinstall anchor, cable and chain to vessel.

3.2 Location

3.2.1 Fore Deck

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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, VMM, and BV Inspector.

4.2 Testing

4.2.1 Two (2) copies of test certificates for new joining shackles shall be given to the Chief Engineer along with an electronic copy forwarded to the VMM.

4.3 Certification

4.3.1 Two (2) copies of test certificates for new joining shackles shall be given to the Chief Engineer along with an electronic copy forwarded to the VMM.

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 Contractor shall deliver 2 hard copies of test certificates and reports to the Chief Engineer. Contractor shall deliver 1 electronic copy of certs/reports to VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

H-10 Additional Draft Marks

Part 1 – SCOPE

1.1 The contractor shall use existing Draft Mark drawing to measure and paint an additional set of draft marks at centerline on stern of vessel.

1.2 This work shall be carried out in conjunction with the following spec items:

1.2.1 HD-02 Hull Cleaning and Painting

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 ISV25-38541RMM4 – Draft Marks

2.2 Standards

2.2.1 N/A

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 Contractor shall use included Draft Mark drawing to measure and mark out an additional set of draft marks on centerline stern of vessel.

3.1.2 Contractor shall use services of an approved Marine Drafting Service to ensure locations of draft marks are correct and to update existing CG Drawings.

3.1.3 Contractor shall run a bead of weld at each draft marking to permanently indicate where painted numbers shall go.

3.1.4 Contractor shall paint draft marks White in accordance with included Draft Mark drawing and HD-02 Hull Cleaning and Painting.

3.2 Location

3.2.1 Centerline on stern of vessel.

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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/or VMM.

4.2 Testing

4.2.1 N/A

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 Contractor shall make changes to CG supplied AutoCad Draft Mark Drawing to include new draft marks on stern.

5.1.2 Contractor shall provide CG with updated drawing prior to launching of vessel.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals – N/A

H-11 Fire Detection System Annual Inspection

Part 1 – SCOPE

1.1 The intent of this specification shall be for the contractor to arrange for a certified company to perform an annual inspection and certification of the fire detection system.

1.2 This work shall be carried out in conjunction with the following spec items:

1.2.1 H-05 Ships Portable Fire Extinguishers

1.2.2 H-14 Fixed Fire Fighting System Annual Inspection

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 Integrated Fire Detection System (IFDS) – Instruction Manual

2.1.2 ISV25-36000RMM7 – Fire Safety Plan

2.1.3 Notifier NFS2-640

2.2 Standards

2.2.1 Fleet Safety and Security Manual (DFO 5737)

2.3 Regulations

2.3.1 Canada Shipping Act 2001

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The system is a Techsol Integrated Fire Detection System which uses a Notifier NFS2-640 Fire Alarm panel. The Notifier NFS2-640 panel is connected to the IFDS which is part of the ships Alarm and Monitoring System.

3.1.2 The contractor shall contact Bureau Veritas Class Society prior to commencing work and will arrange for an inspector to be present if required.

3.1.3 The Contractor shall arrange for a certified company to perform an annual inspection on the fire detection system and to provide certification.

3.2 Location

3.2.1 The control panel for the fire detection system is located on the port side wheelhouse.

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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, VMM, and BV Inspector.

4.2 Testing

4.2.1 N/A

4.3 Certification

4.3.1 Contractor shall deliver 2 hard copies of service certificates and original service certificate to Chief Engineer. Contractor shall deliver 1 electronic copy of all reports/certs to VMM

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 The Contractor shall provide the Chief Engineer with a hard copy of the typewritten report outlining the details of the inspection and any alterations / repairs made prior to the acceptance of this item. Contractor shall deliver 1 electronic copy of all reports/certs to VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-12 Global Davit Annual Inspection

Part 1 – SCOPE

1.1 The intent of this specification shall be for the contractor to arrange for a Global Davit certified company to perform an annual inspection and certification of the rescue boat davit and all fitted lifting gear.

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 Canada Shipping Act 2001

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The davit is a Global Davit GmbH.

3.1.1.1 Davit Type - Rhs.13/3.5

3.1.2 The Contractor shall arrange for a Global Davit certified company to perform the annual inspection and certification on the deck crane and connected lifting gear.

3.2 Location

3.2.1 The davit is located on the port side of the wheelhouse deck.

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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, VMM, and BV Inspector.

4.2 Testing

4.2.1 N/A

4.3 Certification

4.3.1 Contractor shall deliver 2 hard copies of service certificates and original service certificate to Chief Engineer. Contractor shall deliver 1 electronic copy of all reports/certs to VMM

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 The Contractor shall provide the Chief Engineer with a hard copy of the typewritten report outlining the details of the inspection and any alterations / repairs made prior to the acceptance of this item. Contractor shall deliver 1 electronic copy of all reports/certs to VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-13 Port Main Engine Maintenance

Part 1 – SCOPE

1.1 The intent of this specification shall be to have the contractor supply the services of a Caterpillar Field Representative (FSR) to carry out entire maintenance as listed below in the technical description. The contractor shall submit an allowance of $3500 for the services of the FSR. Any items found to be defective shall be replaced or repaired by FSR and will be adjusted by PWGSC 1379 action.

1.2 This work shall be carried out in conjunction with the following spec items:

1.2.1 H-17 Ship Service Generator Maintenance

1.2.2 H-21 Stbd Main Engine Repairs.

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 Port Main Engine C18

2.1.1.1 Port Main Engine – Serial # T2P01011

2.2 Standards

2.2.1 As per Manufacturer's recommendations

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The Contractor shall supply the services of the FSR to carry out the below maintenance as listed in the Owner's Manual.

3.1.1.2 Main Engines – 5000 Hour

- Inspect Alternator
- Inspect Water Pump
- Check/Clean/Test Oil Cooler Core
- Inspect Turbocharger
- Inspect Heat Exchanger
- Clean/Test Aftercooler Core
- Replace CCV Fumes Disposal Filter

3.2 Location

3.2.1 Engine Room

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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, VMM, and BV Inspector.

4.2 Testing

4.2.1 FSR shall be present for seatrials upon completion of refit to confirm correct operation of all CAT equipment.

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 Contractor shall deliver 2 hard copies of test certificates and reports from FSR to the Chief Engineer. Contractor shall deliver 1 electronic copy of certs/reports to VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-14 Fixed Fire Fighting System Annual Inspection

Part 1 – SCOPE

1.1 The intent of this specification shall be to have the fixed firefighting systems serviced and re-certified for use on the CCGS Vladykov.

1.2 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 the following spec items:

1.3.1 H-05 Ships Portable Fire Extinguishers

1.3.2 H-11 Fire Detection System

1.4 The fixed firefighting system is a 3M Novec 1230 system.

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 ISV 22M Novec System

2.2 Standards

2.2.1 The contractor must be approved to recertify these systems and must be done so in accordance with the latest regulations concerning marine safety.

2.2.2 The contractor must adhere to the ships ISM hotwork, confined space entry, fall protection and lockout procedures.

2.3 Regulations

2.3.1 Canada Shipping Act 2001

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The contractor shall provide an authorized representative to perform the tests and inspections of the vessel's Novec 1230 system for annual safety inspection and certification. The Chief Engineer must witness all tests.

3.1.2 The contractor shall complete the following tests, as well as any other tests requested by the attending BV Inspector. 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 The Novec bottles are located in the cargo hold.

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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, VMM, and BV Inspector.

4.2 Testing

4.2.1 The Chief Engineer shall be present during the inspection and testing of the system.

4.3 Certification

4.3.1 Contractor shall deliver 2 hard copies of service certificates and original service certificate to Chief Engineer. Contractor shall deliver 1 electronic copy of all reports/certs to VMM

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 The Contractor shall provide the Chief Engineer with a hard copy of the typewritten report outlining the details of the inspection and any alterations / repairs made prior to the acceptance of this item. Contractor shall deliver 1 electronic copy of all reports/certs to VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-15 Fwd and Aft Ballast Tanks Inspection

Part 1 – SCOPE

1.1 The intent of this specification shall be to have the contractor open the Fore Peak and Aft Water Ballast tanks for cleaning, inspection and testing for BV certification. Any items found to be defective shall be repaired by PWGSC 1379 action.

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 ISV25-10130RMM11 – Tank Plan

Fore Peak Tank – Frame 32 to 35 – Capacity 6.8m^3

Aft Peak Tank Port and Stbd – Frame 0 to 4 – Capacity 5.6m^3 per tank

2.2 Standards

2.2.1 N/A

2.3 Regulations

2.3.1 Canadian Coast Guard Fleet Safety Manual (DFO 5737)

2.3.2 Coast Guard ISM Confined Space Entry 7.D.9

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The Contractor shall provide a method to have the spaces certified gas free, safe for personnel to enter and safe for hotwork. Hard copy of certificate shall be given to Chief Engineer and electronic copy shall be forwarded to VMM. A copy shall also be posted in a conspicuous location near the entrance to each space.

3.1.2 Contractor shall supply all ventilation equipment required for the gas free certificate and the certificates continued validity for the duration of the work.

3.1.3 All functional tank openings (vents, ducts, valves, controls, transducers etc.) and related equipment shall be blanked or otherwise protected prior to and during cleaning, blasting or painting.

3.1.4 The tanks shall be pumped as low as possible using the ships pumps. Contactor will use their own pumps and hoses to pump out remaining water, mud, dirt and debris.

3.1.5 Contractor shall clean by mechanical means (may include high pressure fresh water) the entire interior to of the tanks. All steel surfaces in this area are to be cleaned of all loose paint, scale, salt deposits, dirt and any other debris. All debris and water shall be removed from tank and disposed of ashore.

3.1.6 Prior to blasting and paint operations, each tank shall be inspected by BV Inspector, Chief Engineer and VMM.

3.1.7 Areas of bare steel after mechanical cleaning to be vacuum abrasive blast cleaned to minimum SSPC-SP-6 (ISO 8501-1:1988) or International Paint Hydro blasting Standard HB2M. If oxidation occurs between blasting and application of Intershield 300, the surface must be re-blasted to the specified visual standard prior to application of Intershield 300.

3.1.8 Contractor to ensure that blasting grit does not escape from tank and all traces of grit are removed from the ship. Contractor shall bid on grit blasting 20 m^2 and provide a unit cost per square metre.

3.1.9 Contractor to apply:

3.1.9.1 One coat of: Intershield 300 Bronze color at 5 to 8 mils D.F.T. per coat to all bare areas.

3.1.9.2 One coat of: Intershield 300 Aluminum color at 5 to 8 mils D.F.T per coat to all primed areas and at least an overlap of 3 cm onto existing coating.

3.1.10 Contractor shall follow paint manufacturer's instructions for mixing, ventilation, application and precautions.

3.1.9 The VMM, Chief Engineer or if required BV Inspector shall be present when the manhole covers are reinstalled. The contractor shall clean the sealing surfaces around the manhole and cover and install the cover using new ¼ inch thick neoprene gaskets. Anti-seizing compound shall be used on all threads. The Contractor shall quote separately the unit cost per stud to replace any broken manhole securing studs.

3.1.10 The contractor shall bid on pneumatic testing of each individual tank as well as quoting a unit price for each tank to be hydrostatic tested. The quote shall include the installation and removal of blanks for suction, overflow pipes and vent head removals, additional tank openings, and tank drainage (including the disposal of water and the wiping down of the tank internals).

3.1.11 The attending BV Class inspector solely shall determine the test method. All tests shall be witnessed by the attending BV Inspector, Chief Engineer and VMM.

3.2 Location

3.2.1 Fore Peak Tank – Frame 32 to 35

Aft Peak Tank Port and Stbd – Frame 0 to 4

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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, VMM, and BV Inspector.

4.2 Testing

4.2.1 As determined by attending BV inspector, either pneumatic or hydrostatic testing.

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 Contractor shall deliver 2 hard copies of test certificates and reports to the Chief Engineer. Contractor shall deliver 1 electronic copy of certs/reports to VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-16 Sea Trials

Part 1 – SCOPE

1.1 The intent of this specification shall be to carry out sea trials as a functional test of the ships propulsion and other systems.

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 On completion of all specification items, sea trials shall be carried out as a functional test of the ships propulsion and other systems

3.1.2 Sea trials shall last a minimum of 2 hours.

3.1.3 Trials will contain ahead and astern movements at various power levels.

3.1.4 Trials will be carried out to the satisfaction of the Chief Engineer, Commanding Officer, VMM, Contracting Officer and BV Inspector.

3.1.5 The contractor shall ensure that any subcontractors or FSR's used during this refit be present for trials unless otherwise indicated by VMM.

3.1.6 Contractor shall have sufficient supervisory staff on board, during these trials to witness the operation of machinery which was worked on during this refit.

3.2 Location

3.2.1 N/A

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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/or VMM.

4.2 Testing

4.2.1 N/A

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 N/A

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-17 Ship Service Generators Maintenance

Part 1 – SCOPE

1.1 The intent of this specification shall be to have the contractor supply the services of a Caterpillar Field Representative (FSR) to carry out entire maintenance as listed below in the technical description. The contractor shall submit an allowance of $4000 for the services of the FSR. Any items found to be defective shall be replaced or repaired by FSR and will be adjusted by PWGSC 1379 action.

1.2 This work shall be carried out in conjunction with the following spec items:

1.2.1 H-13 Port Main Engine Maintenance

1.2.2 H-21 Stbd Main Engine Repairs

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 Ship Service Generators C6.6

2.1.2.1 Port Generator – Serial # C6T00280

2.1.2.2 Stbd Generator – Serial # C6T00281

2.2 Standards

2.2.1 As per Manufacturer's recommendations

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The Contractor shall supply the services of the FSR to carry out the below maintenance as listed in the Owner's Manual as well as any other items listed in the Owner's Manual.

3.1.1.2 Ship Service Generators – 500, 1000, 2000, 3000 and 6000 hour maintenance

- Check Engine Protective Devices
- Clean/Test Aftercooler Core
- Replace Cooling Water Temperature Regulator
- Sample CAT ELC
- Inspect Alternator
- Inspect Generator Set Vibration
- Inspect Engine Mounts
- Inspect Heat Exchanger
- Test Insulation
- Inspect Starting Motor
- Inspect Turbocharger
- Replace Oil and Filters
- Inspect Water Pump
- Clean/Inspect Magnetic Pickups
- Inspect Adjust Engine Valve Lash
- Inspect/Clean Aftercooler Condensate Drain Valve

3.2 Location

3.2.1 Engine Room

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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, VMM, and BV Inspector.

4.2 Testing

4.2.1 FSR shall be present for seatrials upon completion of refit to confirm correct operation of all CAT equipment.

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 Contractor shall deliver 2 hard copies of test certificates and reports from FSR to the Chief Engineer. Contractor shall deliver 1 electronic copy of certs/reports to VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-18 Annual Leak Testing of Refrigeration Systems

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

2.2 Standards

2.2.1 The contractor 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

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The contractor shall 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.

3.1.3 The following table shows all A/C and Refrigeration Systems in the vessels inventory:

NFL HALOCARBON TAG NUMBER	VESSEL NAME	EQUIPMENT TYPE	EQUIPMENT MAKE	EQUIPMENT MODEL	EQUIPMENT LOCATION	EQUIPMENT SERIAL NUMBER	CAPACITY	UNITS	REFRIGERANT TYPE	LIQUID/AIR COOLED	REFRIGERANT QUANTITY IN USE (KG)	YEAR INSTALLED	RESP. CENTER
2	Vladykov	Freezer	NORBEC	CJAL0150CAB	Port,Fwd. Storage Room	11E20830	9	MBH	R404	Air	8.00 lb 0.00 oz	2012	Operations
3	Vladykov	Cold Room	NORBEC	ENAG-A075-AV020	Port, Fwd. Storage Room	HF20207V	5.5	MBH	R134A	Air	8.00 lb 0.00 oz	2012	Operations
4	Vladykov	A/C	Fujitsu	AOU48RLXFZ	W/H Top	KNN00909	48000	BTU	R410A	Air	7.00 lb 10.0 oz	2012	Operations
4A	Vladykov	A/C	Fujitsu – Halcyon DC Inverter	ASU12RLF	Dry Lab	KRA013672	12000	BTU	R410A	N/A	Part of # 4	2012	Operations
4B	Vladykov	A/C	Fujitsu – Halcyon DC Inverter	ASU18RLF	W/H Aft.	KSA004707	18000	BTU	R410A	N/A	Part of # 4	2012	Operations
4C	Vladykov	A/C	Fujitsu – Halcyon DC Inverter	ASU18RLF	W/H Fwd.	KSA004757	18000	BTU	R410A	N/A	Part of # 4	2012	Operations
5	Vladykov	A/C	York	TCHD24541S3A	W/H Top	W1C1792134	24	MBH	R410A	Air	4.00 lb 7.0 oz	2012	Operations
6	Vladykov	Sea Water Chiller	Ref Plus	MCS-020-5M4-9	Aux. Mach. Space	D-2011050027	35800	BTU	R404A	Liquid (S.W.)	4.00 lb 0.0oz	2012	Operations

NFL HALOCARBON TAG NUMBER	VESSEL NAME	EQUIPMENT TYPE	EQUIPMENT MAKE	EQUIPMENT MODEL	EQUIPMENT LOCATION	EQUIPMENT SERIAL NUMBER	CAPACITY	UNITS	REFRIGERANT TYPE	LIQUID/AIR COOLED	REFRIGERANT QUANTITY IN USE (KG)	YEAR INSTALLED	RESP. CENTER
7	Vladykov	Refrigerator/ Freezer	Copeland	RST45C1E-IAA-108	Dry Lab Aft.	11H20526E	21	Ft^3	R404A	Air	5 lb 12.8 oz	2012	Operations
8	Vladykov	Refrigerator/ Freezer	Copeland	RST45C1E-IAA-108	Dry Lab Fwd.	11H27225E	21	Ft^3	R404A	Air	5 lb 12.8 oz	2012	Operations
9	Vladykov	Refrigerator	Blue Air	BASR1	Galley	LTRI-K05-0013	23	m^3	R134A	Air	0 lb 8.5 oz	2012	Operations

3.2 Location

3.2.1

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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 shall 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/her certificate number to be recorded in the log book.

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 The Contractor shall provide the Chief Engineer with a hard copy of the typewritten report outlining the details of the inspection and any alterations / repairs made prior to the acceptance of this item. Contractor shall deliver 1 electronic copy of all reports/certs to VMM. This report must include the condition of the system as found, all work performed on it and the condition as left.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-19 Drylab A/C Drain

Part 1 – SCOPE

1.1 The contractor shall supply and install new drain line for A/C unit in Drylab and connect it to the existing deck drain line in the engine room. Contractor shall use included Lab AC Unit Deck Drain Penetration Drawing and GA Drawing for reference.

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 ISV25-30000RMM9 - General Arrangement

2.1.2 Vladykov – Lab AC Unit Deck Drain Penetration Detail

2.2 Standards

2.2.1 The following Coast Guard Standards and/or Technical Bulletins must be followed while executing this specification. Copies of these standards and bulletins can be obtained from the CCG Technical Authority.

2.2.1.1 Canadian Coast Guard Fleet Safety Manual (DFO 5737)

2.2.1.2 Coast Guard ISM Lockout/Tagout

2.2.1.3 Coast Guard ISM Hotwork procedures

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 Contractor shall use included General Arrangement and Vladykov Lab AC Unit Deck Drain Penetration Detail drawing to determine location of deck penetration for drain connections.

3.1.2 The Contractor shall confirm exact location of deck penetration with Chief Engineer prior to starting work.

3.1.3 Contractor shall make every effort to ensure disturbed deck material is kept to a minimum.

3.1.4 Contractor shall use included drawings to get detailed instructions on materials, welding procedures, testing procedures along with other pertinent information.

3.1.5 Upon completion of work contractor shall test the drain by running 10 Liters of water from AC Unit connection to ensure no blockages.

3.1.6 Upon completion of testing, contractor shall reapply Dex-O-Tex coatings as per manufacturer's recommendations and install a new piece of CG Supplied deck covering.

3.1.7 Contractor shall supply and install a decorative SS disk to fit over pipe penetration in lab to cover any disturbed decking material.

3.2 Location

3.2.1 Dry lab port side

3.2.2 Engine Room port side near escape hatch

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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/or VMM.

4.2 Testing

4.2.1 Contractor shall prove the drain line operates properly by allowing minimum 10L of water to drain from AC connection through drain line. Operation and testing must be witnessed and approved by Chief Engineer.

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 N/A

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-20 Lower Port and Stbd Accommodation Showers

Part 1 – SCOPE

1.1 The intent of this spec is to have the contractor remove existing shower stall panels in both lower accommodation washrooms and determine how water is leaking aft into the crews cabins.

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 Contractor shall remove the 3 shower stall panels from each washroom with the intent on reinstalling upon completion of work.

3.1.2 Contractor shall advise Chief Engineer upon removal of panels to determine where water is leaking from the shower stalls to aft crews cabins.

3.1.3 Contractor shall remove any wet/damaged insulation and replace with new insulation of same rating and thickness. If new insulation is required, this shall be adjusted by PWGSC 1379 action.

3.1.4 Contractor shall allow sufficient time for any water found behind panels to adequately dry before installing new insulation.

3.1.5 Contractor shall supply and install new marine shower controls with mixing valve to both washrooms.

3.1.6 Contractor shall remove any loose or cracked coating on the shower stall deck.

3.1.7 Contractor shall apply fibreglass coating with grit to bottom and approx. 12 inches up the sides of shower stalls to ensure the base is completely sealed. Contractor shall ensure that upon completion of fibreglass work that the drain is still able to function and be removed as required and that there are no sharp edges of fibreglass.

3.1.8 Contractor shall apply a light grey gel coat to the final layer of fibreglass.

3.1.8 If the location of water leaking from shower stalls is not from the base, the contractor and Chief Engineer shall determine appropriate repair method. This repair will be negotiated by PWGSC 1379 action.

3.1.9 Upon completion of all work, contractor shall reinstall shower stall panels and ensure that they provide an overlap with the fibreglass base to prevent water from leaking out.

3.1.10 If new panels are required, a PWGSC 1379 shall be raised.

3.2 Location

3.2.1 Lower accommodations port and stbd side

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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/or VMM.

4.2 Testing

4.2.1 Showers must be run to prove correct operation of mixing valve.

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 N/A

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-21 Stbd Main Engine Repairs

Part 1 – SCOPE

1.1 The intent of this specification shall be to have the contractor supply the services of a Caterpillar Field Representative (FSR) to carry out entire maintenance as listed below in the technical description. The contractor shall submit an allowance of $75,000 for the services of the FSR. Any items found to be defective shall be replaced or repaired by FSR and will be adjusted by PWGSC 1379 action.

1.2 This work originated from a routine oil sample showing extremely high levels of copper. The actual amount of time it takes for the FSR to complete this work will be determined once the source of the copper is found.

1.3 This spec item shall be completed in conjunction with H-17 Ship Service Generator Maintenance and H-13 Port Main Engine Maintenance.

1.4 Services of FSR shall be arranged prior to March 3, 2014 so as to ensure that sufficient technicians are available to complete this work. This work shall start during first 2 days of refit.

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 Stbd Main Engine C18

2.1.1.1 Stbd Main Engine – Serial # T2P01047

2.2 Standards

2.2.1 As per Manufacturer's recommendations

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The Contractor shall supply the services of the FSR to investigate/overhaul Stbd Main Engine to determine source of copper contamination in Lube Oil.

3.1.2 The Contractor shall provide a unit cost to remove and reinstall the stbd gear box if required by CAT FSR. If required, gearbox shall be moved and stored in the cargo hold. If gearbox is not required to be removed, price shall be adjusted down by PWGSC 1379 action.

3.1.3 Contractor shall bid on supplying 50 man hours to assist CAT FSR if required and requested through Chief Engineer. These hours are not to be used for Gearbox removal

3.1.4 Contractor shall arrange the services of a qualified company to provide laser alignment on Main Engine, Gearbox and Shafting upon completion of work.

3.2 Location

3.2.1 Engine Room

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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, VMM, and BV Inspector.

4.2 Testing

4.2.1 FSR shall be present for seatrials upon completion of refit to confirm correct operation of all CAT equipment.

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 Contractor shall deliver 2 hard copies of test certificates and reports from FSR to the Chief Engineer. Contractor shall deliver 1 electronic copy of certs/reports to VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

H-22 Anchor Windlass Inspection

Part 1 – SCOPE

1.1 The intent of this specification shall be to open the anchor windlass for inspection for Bureau Veritas (BV) and to repair as required. Any repairs will be covered by PWGSC 1379 action.

1.2 This work shall be carried out in conjunction with the following spec items:

1.2.1 H-09 Anchors, Chain and Cable.

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 ISV25 – 40500RMM6 - Anchor and Mooring Arrangement Drawing

2.1.2 Anchor Winch – HSF 2226 Owner's Manual

2.2 Standards

2.2.1 N/A

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The contractor shall take a sample of the windlass oil with sample bottle provided by Chief Engineer.

3.1.2 The contractor shall lockout and tagout any hydraulic pump units prior to starting this item. Also, if connected, the anchor must be secured to prevent any movement.

3.1.3 The contractor shall drain all oil from Windlass and flush with new ISO VG 32 Oil equivalent to the amount originally drained.

3.1.4 The contractor shall remove the brake assemblies and clutch lever assemblies. All linkage pins shall be removed, cleaned and laid out for inspection. The drum and brake shoes shall be cleaned to remove any built up scale.

3.1.5 The contractor shall remove casing from windlass for inspection of the gears and shaft for wear, the inspection must be carried out by BV Inspector and Chief Engineer.

3.1.6 The contractor shall open up bearings for inspection by BV Inspector and Chief Engineer. Any replacement or repairs of bearing shall be actioned by PWGSC 1379 action.

3.1.7 The contractor is to ensure all grease lines and fittings are free and that grease flows through without any resistance.

3.1.8 The Contractor shall refill with new ISO VG 32 Oil.

3.1.9 Upon re-launching of vessel and re-installation of cable, chain and anchor, Commanding Officer shall complete a functional test to prove correct operation.

3.2 Location

3.2.1 Fore Deck

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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, VMM, and BV Inspector.

4.2 Testing

4.2.1 Vessel shall perform a functional test of windlass during trials to prove correct operation.

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 Contractor shall deliver 2 hard copies of test certificates and reports to the Chief Engineer. Contractor shall deliver 1 electronic copy of certs/reports to VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

HD-01 Drydocking

Part 1 – SCOPE

1.4 The intent of this specification is for the Contractor to provide all required services to dock and undock the vessel including all tugs and handling of ships lines.

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 The Contractor shall dock the vessel in accordance with the vessel's docking plan.

2.1.1.1 ISV25-14100RMM3 – Docking Plan

2.2 Standards

2.2.1 N/A

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The Contractor shall include in the bid all costs for docking and undocking the ship, allowing time to complete all the identified known work within the March 3rd, 2015 – March 31st, 2015 timeframe.

3.1.2 The Contractor shall quote on the unit cost per additional day at the Contractor's facility for a) Vessel on Dock and b) Vessel Floating, and provide the unit cost per day for services a) Vessel on Dock and b) Vessel Floating.

3.1.3 The Contractor shall dock and undock the vessel under the direct supervision of a Certified Docking Master.

3.1.4 A copy of the Docking Plan, Drawing ISV25-14100RMM3 will be made available to the Contractor prior to the docking date. The Contractor shall prepare blocks and necessary shoring to maintain the true alignment of the vessel's hull and machinery during the docking period. A laser alignment of the blocks is to be performed by the Contractor and an alignment report is to be prepared and provided to the Owner's Representative.

3.1.5 The following information is to be recorded by the Contractor on Ship Condition Reports:

3.1.5.1 Prior to docking, all tanks on the vessel to be sounded and contents recorded. Copy to be signed by the ship's Captain, the chief engineer and the Contractors docking master.

3.1.5.2 On docking, all tanks emptied to be listed, and copies held by Contractor and Chief engineer.

3.1.5.3 At undocking, all tanks to be refilled to obtain same draft and trim as at docking, and condition agreed by the Docking master, the ship's captain and the chief engineer.

3.1.6 The Contractor shall supply the services of a diver to confirm that the vessel is settling evenly on the bilge and keel blocks.

3.1.7 A minimum clearance of 4' (1.22m) is to be available below the keel.

3.1.8 The Contractor will be responsible for all line handling during docking and undocking operations, and is to include any tug and/or pilotage service cost.

3.1.9 The Contractor shall ensure that the docking blocks are clear of transducer faces, docking plugs, sea inlet grids and anodes.

3.1.10 The frame spacing is to be marked on the hull as to aid in the initial hull survey by the owner's representative and Class Society. Immediately after hydro-blasting, but prior to any grit blasting for the underwater hull coating, the Contractor is to mark the frame spacing at 5 frame intervals from the stern post (Fr"0"); markings are to be in a contrasting colour, approx. 6" in height, and are to be at the turn of the bilge, port and stbd. Where keel blocks align with the frame spacing, they are also to be marked in a similar manner, port and stbd.

3.1.11 The Contractor shall remove five (5) docking plugs to drain water accumulation. All docking plugs removed shall be tagged immediately after removal, stored in a suitable

container and given to the owner's representative. A ships officer is to be present when docking plugs are removed and reinstalled. Docking plugs to be removed are located in three (3) water ballast tanks and two (2) grey water tanks. The location of plugs is shown on the docking plan. Any docking plugs removed will require openings to be temporarily filled with wood plugs during operations such as sandblasting, painting, etc. which could cause contamination of the tanks to occur.

3.1.12 During undocking, the Contractor is to have sufficient personnel in attendance to standby any sea connections, stern tubes, sea chests, etc. that were opened up during the drydocking period to correct any deficiencies that may arise.

3.2 Location

3.2.1 N/A

3.3 Interference

3.3.1 Contractor shall be responsible for the identification of interference items, their temporary removal, and 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, VMM, and if required the Class Inspector.

4.1.2 The Contractor shall dock the vessel in accordance with the vessels docking plan drawing ISV25-14100RMM3 – Docking Plan

4.2 Testing

4.2.1 N/A

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 At undocking, all tanks to be refilled to obtain the same draft and trim as at docking, and condition agreed by the Docking Master, the ship's captain and the chief engineer.

5.1.2 Three (3) copies of all checklists and reports shall be given to the Chief Engineer along with an electronic copy forwarded to the VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

HD-02 Hull Cleaning and Painting

Part 1 – SCOPE

1.1 The intent of this specification shall be to remove all marine growth and completely hydro blast the hull from keel to main deck and to install new underwater hull coating and coating from the water line to main deck, including the complete bow area above the waterline. This shall include outboard side of bulwarks.

1.2 This work shall be carried out in Conjunction with spec items:

1.1.1 HD-06 Anodes

1.1.2 HD-01 Dry Docking

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 ISV25-38541RMM4 - Draft Marks

2.1.2 ISV25-38400RMM3 - Cathodic Protection Plan

2.1.3 CCGS Vladykov – Vessel Exterior Coatings Area

2.2 Standards

2.2.1 The coatings shall be applied to the manufacturer's instructions and on-site NACE Inspector.

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

2.4.1 The Contractor shall supply all staging, cranage, screens, lighting and any other support services and equipment for cleaning and coating the hull.

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The Contractor shall ensure that the entire hull from main deck to keel including(but not limited to) rudders, propellers and the thruster tube is cleaned by high pressure fresh water washing (5000PSI Minimum)within 2 hours of docking to remove all marine growth and allow a preliminary hull inspection. Prior to commencing hydro blasting, all hull mounted equipment and openings are to be fully protected. The Owner's representative will then inspect the entire hull.

3.1.2 The area of the hull from the keel to the waterline including appendages is: 285 m^2.

3.1.3 The area from the waterline to main deck, including the complete bow area above the waterline is: 199 m^2.

3.1.4 The Contractor shall remove all sacrificial zinc anodes mounted on the underwater hull, and appendages in conjunction with HD-06. Old attachment straps shall be removed and ground down flush. Any disturbed steel work shall be coated as per below paint scheme.

3.1.5 The Contractor shall assign a representative to view the ship as it sits on the blocks, subsequent to cleaning and prior to blasting and painting. An owner's representative and Contractor's representative will view the ship and agree upon the total area of the underwater hull which is to be grit blasted and touched up.

3.1.6 The Contractor shall bid on abrasive blasting 100 m^2 square meters to SSPC SP10 and provide unit cost for abrasive blasting per square meter. The remainder of the hull including areas of the undamaged coating are to be grit swept and edges feathered or chipped back to provide a suitable bonding surface for the new application. The hard grit sweeping is to overlap onto existing coats by 3 cm. The Contractor shall provide unit cost per square meter for abrasive sweep blasting if adjustment by PWGSC 1379 action is required.

3.1.7 The Contractor shall bid on supplying and applying 70m^2 of the following to the underwater portion where required:

3.1.7.1 One coat of: Intershield 300 Aluminum color at 5 mils DFT to all bare areas.

3.1.7.2 One coat of: Intergard 263 Grey at 4 mils DFT to all primed areas and 3 cm overlap onto existing coating.

3.1.7.3 Topcoat of either:

3.1.7.3.1 Interclene 245NA Black 6 mils DFT keel up to the waterline – one coat

3.1.7.3.2 Interspeed 640 Black at 7 mils DFT to Kort Nozzle – two coats

3.1.7.3.3 Interspeed 640 Black at 7 mils DFT to Bowthruster tunnel – two coats

3.1.7.3.4 Intergard 345 White at 4 mils DFT to Draft Marks – two coats

3.1.8 Contractor shall draw and mark off the waterline which runs across the stern and forward from the 3.7 meter draft aft to the 3.7 meter draft forward. The Contractor shall bid on supplying and applying 30m^2 from the waterline up to the main deck level, including the complete bow portion above the waterline, the following:

3.1.8.1 One coat of: Red Oxide Alkyd Primer 713 to all bare areas.

3.1.8.2 One tie coat of Matchless Super Marine 722 Coast Guard Red, 700 White or 708 Black applied at 1.5 mils DFT to all primed areas and 3 cm overlap onto existing coating.

3.1.8.3 One Topcoat of Matchless Super Marine 722 Coast Guard Red, 700 White or 708 Black applied at 1.5 mils DFT to all tie coated areas

3.1.9 Contractor shall ensure that all sea bay grids are protected during application of coating and orifice diameters are to be verified as original before undocking (i.e. not blocked or reduced).

3.1.10 The Contractor shall be responsible and liable for ensuring that the hull is clear and clean prior to, during and immediately after the coating application.

3.1.11 The Contractor shall arrange for the services of a certified NACE Inspector to ensure that all surface areas are prepped and coatings applied to Manufactures instructions.

3.1.12 All staging, cranage, screens, lighting and any other support services and equipment for cleaning and coating the hull shall be Contractor supplied.

3.1.13 Contractor shall ensure suitable storage facilities are to be provided close to the work site for the material and equipment, to ensure they will be maintained at the recommended temperature of the coating manufacturer for ease of preparation and proper application.

3.1.14 Contractor shall ensure the mixing and spraying equipment be kept heated and protected as necessary, while in use, to ensure that he coating is maintained at the recommended temperature.

3.1.15 Any docking plugs removed will require openings to be temporarily filled with wood plugs during operations such as sandblasting, painting, etc. which could cause contamination of the tanks to occur.

3.2 Location

3.2.1 Hull including outboard side of bulwarks to keel and appendages.

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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, Commanding Officer, VMM and onsite NACE inspector.

4.1.2 Grit for the blast cleaning is not permitted to enter any part of the vessel. The Contractor is to ensure that every opening into the vessel where grit can gain entry is suitably covered. All traces of grit used for blast cleaning shall be removed from the vessel by the Contractor.

4.1.3 The Contractor shall plug deck scuppers and discharges as well as take other measures necessary to prevent liquids from contaminating areas being prepared or coated. Measures shall also be taken to ensure that surfaces and equipment other than those specified are not coated and that inlets or discharges in the shell will not be blocked by the coating. Deck machinery and other gear susceptible to damage by grit or coating material shall also be protected as necessary. The Contractor will be responsible for removing all protection prior to acceptance of vessel. The Contractor shall be responsible for removing any overspray on the vessel as a result of this work.

4.2 Testing

4.2.1 Paint thickness readings shall be taken along with environmental conditions and distributed as per 5.1.1. Readings shall include but not limited to hull temperature, air temperature, humidity etc.

4.3 Certification

4.3.1 Certificates from Paint Supplier for all coatings used.

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 The Contractor shall prepare a report that indicates:

5.1.1.1 The areas on the underwater hull that were repaired.

5.1.1.2 Which areas were blasted and indicate the blast media type and air pressure

5.1.1.3 Which areas were coated **with** what type of product and how much of each coating was used.

5.1.1.4 Thickness measurements of the applied coatings.

5.1.1.5 Atmospheric conditions (temp, humidity, etc.)

5.1.1.6 Temperature of the vessels hull

5.1.2 Three (3) copies of all checklists and reports shall be given to the Chief Engineer along with an electronic copy forwarded to the Vessel Maintenance Manager.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

HD-03 Sea Chests

Part 1 – SCOPE

1.1 The intent of this specification is to open up the sea chests for BV Inspection and cleaning.

1.2 This work shall be carried out in conjunction with the following Spec Items: H-01 Drydocking, HD-06 Anodes and HD-07 Sea Connections Inspection.

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 ISV25-10130RMM11 - Tank Plan

2.1.2 ISV25-73500RMM12 - Cooling Water System Diagram

2.1.3 ISV25-82000RMM7 - Chilled Sea Water System Diagram

2.2 Standards

2.2.1 The coatings shall be applied to the manufacturer's instructions.

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 Contractor shall remove the sea chest grids and water blast the sea chest area. The grids and inlet areas shall be cleaned and mechanically reamed to the original diameter. The sea chests shall be thoroughly cleaned of marine growth, loose scale and rust.

3.1.2 In conjunction with Spec Item HD-07 Sea Connections, contractor shall clean pipe between sea chest and ship side valves.

3.1.3 Contractor shall bid on cleaning a total of 20 m^2 and coating a total area of 3 m^2.

3.1.4 The contractor shall submit with the bid a unit cost for the cleaning, blasting and coating of any additional area. This unit cost will be used to increase or decrease costs after initial inspection by PWGSC 1379 action.

3.1.5 Contractor shall sandblast all bare areas in the sea inlets to SA 2.5 near Surface White with the existing edges feathered back.

3.1.6 Contractor shall apply:

3.1.6.1 One coat Intershield 300 at 5 mils DFT to all bare areas

3.1.6.2 One coat Intergard 263 Grey at 4 Mils DFT to all primed areas.

3.1.6.3 One complete coat Interclene 245NA Black at 6 Mils DFT to entire sea chest areas.

3.1.7 Following completion of specified work and other related work, the grids shall be reinstalled with new contractor supplied bolts and locking wire.

3.2 Location

3.2.1 Sea Chest Upper Port– Frames 19 to 20 and Lower Port – Frames 18 to 19

3.2.2 Sea Chest Upper Stbd – Frames 19 to 20 and Lower Stbd – Frames 18 to 19

3.2.3 Aft Sea Chest – Slightly Stbd of Midships - Frames 7 to 8

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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, VMM, and BV Inspector.

4.2 Testing

4.2.1 Paint thickness readings shall be taken along with environmental conditions and distributed as per 5.1.1. Readings shall include but not limited to hull temperature, air temperature, humidity etc.

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 Contractor shall deliver two (2) hard copies of all checklists and reports to Chief Engineer. Contractor shall deliver 1 electronic copy of all reports to VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

HD-04 Port and Stbd Stern Tube Stuffing Boxes

Part 1 – SCOPE

1.1 The Contractor shall remove and reinstall stuffing box end plate, remove and reinstall packing and clean shaft contact area on both shafts.

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 ISV25-52600RMM4 - Stern Tube & Shaft Bracket Arrangement

2.2 Standards

2.2.1 N/A

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The Contractor shall quote on the removal of the stuffing box end plate, removal of old packing, cleaning and inspections of the stern tube stuffing boxes for port and stbd shaft.

3.1.2 The Contractor shall quote on installing new packing and reinstalling the items removed as per manufacturer's instructions. The stuffing box is Johnson stuffing box #1786 requiring 3/4 inch Duramax Ultra-X high performance marine packing. Both Port and Starboard stuffing boxes are identical.

3.1.3 Any damages found during inspections shall be covered by PWGSC 1379 action.

3.2 Location

3.2.1 1 located in Port side Cargo Hold under deck plates.

1 located in Starboard side Cargo Hold under deck plates.

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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/or VMM.

4.2 Testing

4.2.1 N/A

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 N/A

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

HD-05 ADCP Install

Part 1 – SCOPE

1.1 The intent of this specification shall be to have the Contractor install the Government Supplied Acoustic Doppler Current Profiler (ADCP) in existing ADCP well.

1.2 This work shall be carried out under the direction and instruction of Mr. Murray Scotney from DASCO Equipment. Mr. Scotneys contact info can be found below.

DASCO Equipment Inc.
Post Office Box 370
240 Fitzroy Street
Charlottetown
Prince Edward Island, C1A 7K7
CANADA

Mr. Murray Scotney
Tel: 902-566-9285
Fax: 902-566-9202
E-mail: dasco.murray@gmail.com

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 ADCP – Acoustic Windows & Wells

ACDP – Design of a Sea Chest

Any manuals provided by FSR

ISV25 – 21260RMM6 – Transducer Housing

2.2 Standards

2.2.1 N/A

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

2.4.1 Canadian Coast Guard shall supply ADCP unit. The Contractor shall supply all other materials, equipment and parts required to perform the specified work unless otherwise

stated. This includes but not limited to approx. 250L of glycol, ADCP clear lens, gasket and bolts.

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The Contractor shall contact FSR at DASCO Equipment and bid an allowance of $5000 for his services. The actual cost shall be adjusted up or down via PWGSC 1379 action upon proof of invoice. FSR will be onsite to instruct and supervise.

3.1.2 Contractor shall remove existing steel plate from ADCP well.

3.1.3 Contractor shall install GSM ADCP unit as per instructions from FSR.

3.1.4 Contractor shall supply and install new clear ADCP lens, o-ring and bolts as per FSR and Transducer Housing drawing.

3.1.5 Contactor shall fill ADCP well approx. ¼ full with glycol to ensure no leaks around lens.

3.1.6 Upon re-launching of vessel Contractor shall fill ADCP well to half way in sight glass located in Dry Stores.

3.1.7 Upon re-launching and filling of glycol Contractor shall contact FSR to revisit the vessel to verify correct operation of ADCP unit.

3.2 Location

3.2.1 Sight glass located in Dry Stores

ADCP access under lower accommodation deck and from outside.

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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, VMM, Commanding Officer and FSR.

4.2 Testing

4.2.1 FSR shall function test ADCP after re-launching of vessel. Two (2) copies of test certificates and checklists from trials shall be given to the Chief Engineer along with an electronic copy forwarded to the VMM.

4.3 Certification

4.3.1 Two (2) copies of test certificates and checklists from trials shall be given to the Chief Engineer along with an electronic copy forwarded to the VMM.

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 Two (2) copies of any reports from FSR shall be given to the Chief Engineer along with an electronic copy forwarded to the VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

HD-06 Anodes

Part 1 – SCOPE

1.1 The intent of this specification is for the Contractor to replace all the wasted anodes on the underwater portion of the vessel.

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 ISV25-38400RMM3 - Cathodic Protection Plan

2.1.2 ISV25-90520RMM4 - Rudder and Nozzle Arrangement

2.2 Standards

2.2.1 The following Coast Guard Standards and/or Technical Bulletins must be followed while executing this specification. Copies of these standards and bulletins can be obtained from the CCG Technical Authority.

2.2.1.1 Coast Guard ISM Confined Space Entry 7.D.9

2.2.1.2 Coast Guard ISM Hotwork procedures

2.2.1.3 Coast Guard ISM Fall Protection procedures

2.2.1.4 Canadian Coast Guard Welding Specifications for Ferrous Materials, Revision 4. (TP6151 E).

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The Contractor shall, after consulting with the Chief Engineer and/or VMM remove any wasted anodes. Anodes are located on the vessel's hull, bow thruster tunnel, port and stbd upper and lower sea chests, rudder, kort nozzle, keel and shaft guard. Wasted anodes shall be replaced with new anodes as described in included drawings.

3.1.2 The Contractor shall quote on supplying and installing eleven (11), 2.5kg steel strapped bar anodes as described in attached Nozzle and Rudder Arrangement drawing. Contractor shall quote on the cost of a single anode for adjustment purposes by PWGSC 1379 action.

3.1.3 The Contractor shall quote on supplying and installing twelve (12), Z22 steel strap anodes as described in attached ISV25-38400RMM3 - Cathodic Protection Plan. Contractor shall quote on the cost of a single anode for adjustment purposes by PWGSC 1379 action.

3.1.4 Any additional anodes found during drydocking will be replaced by PWGSC 1379 action at the rates given above.

Part 4 – PROOF OF PERFORMANCE

4.1 Inspection

4.1.1 All work shall be completed to the satisfaction of the Chief Engineer, VMM, and if required the Bureau Veritas Class Inspector.

4.2 Testing

4.2.1 N/A

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 Contractor shall deliver two (2) hard copies of all checklists and reports to the Chief Engineer. Contractor shall deliver one (1) electronic copy of all reports to VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

HD-07 Sea Connections and Storm Valve Inspections

Part 1 – SCOPE

1.1 The intent of this item is for the contractor to open up the Sea Connection and Storm Valves as listed below for cleaning, overhaul and inspection for Bureau VERITAS (BV) credit.

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 ISV25 – 30000RMM9 – General Arrangement Drawing

2.1.2 Below table:

BR – Bronze, BS – Brass, SS – Stainless Steel, DI – Ductile Iron, CS – Carbon Steel

Number	Application	TAG #	Description	Location
1	Sewage Pump Ovbd Discharge	25-830-V-018	1.5” SS Swing Check V/V (Flanged)	E/R Stbd Side, aft at Deck Head
2	Sewage Pump Ovbd Discharge	25-830-V-019	1.5” SS Ball Valve (Flanged)	E/R Stbd Side, aft at Deck Head
3	Grey Water Transfer Pump Ovbd Discharge	25-830-V-058	1.5” SS Swing Check V/V (Flanged)	E/R Stbd Side, aft at Deck Head
4	Grey Water Pump Ovbd Discharge	25-830-V-059	1.5” SS Ball Valve (Flanged)	E/R Stbd Side, aft at Deck Head
5	Port High Sea Chest Suction	25-735-V-001	6.00” DI Globe Valve (Flanged)	E/R Fwd, Port Inboard side of high sea chest
6	Port Low Sea Chest Suction	25-735-V-002	6.00” DI 90Deg Globe Valve (Flanged)	E/R Fwd , Port On top of low sea chest
7	Stbd High Sea Chest Suction	25-735-V-003	6.00” DI 90Deg Globe Valve (Flanged)	E/R fwd, Stbd inboard side of high sea chest
8	Stbd Low Sea Chest Suction	25-735-V-004	6.00” DI Globe Valve (Flanged)	E/R fwd, stbd On top of low sea chest
9	Port Main Engine High Sea Chest Recirculation	25-735-V-026	3.00” DI SDNR Globe Valve (Flanged)	E/R fwd, Port Aft on high seachest
10	Port M.E. Discharge	25-735-V-027	3.00” DI SDNR Globe Valve (Flanged)	E/R fwd, port On discharge Manifold
11	Stbd Main High Sea Chest	25-735-V-	3.00” DI SDNR Globe Valve	E/R fwd, Stbd

	Recirculation	043	(Flanged)	Aft on high sea chest
12	Stbd Main Low Sea Chest Recirculation	25-735-V-044	3.00" DI SDNR Globe Valve (Flanged)	E/R fwd, Stbd On top of low sea chest
13	Cooling Manifold Overboard Discharge Stbd	25-735-V-055	6.00" DI 90 Degree SDNR Globe Valve (Flanged)	E/R fwd, port Fwd of gen.
14	Cooling Manifold Overboard Discharge Port	25-735-V-014	6.00" DI 90 Degree SDNR Globe Valve (Flanged)	E/R fwd, port Fwd of valve 014
15	AFT Sea Chest Suction	22-820-V-001	2.00" BS Ball Valve (Flanged)	Aux mach compt Below deck
16	AFT Sea Chest Suction	22-820-V-005	2.00" BS Ball Valve (Flanged)	Aux mach compt Below deck
17	Chiller Exchanger Overboard Discharge	22-820-V-053	1.25" BS SDNR Globe Valve (Flanged)	Aux mach compt Port side aft F/W tank, deck head
19	Port Side Discharge	25-832-V-001	2.00" CS Ball Valve (Flanged)	Port side aft Inside HPU aux oil tank.
20	Port Side Discharge	25-832-V-002	2.00" CS Swing Check Valve (Flanged)	Inboard of v/v 25-832-v-001
21	Stbd Side Discharge	25-832-V-003	2.00" CS Swing Check Valve (Flanged)	Stbd side aft Over HPU units
22	Stbd Side Discharge	25-832-V-004	2.00" CS Ball Valve (Flanged)	Inboard of V/V 25-750-v-003
23	Oily Water Separator Discharge Overboard	22-750-V-029	0.75" Steel SDNR Globe Valve (Flanged)	Port side aft Inside HPU aux oil tank
24	Bilge Ballast Pump Overboard Discharge	22-715-V-029	2.00" BR SDNR Globe Valve (Flanged)	Port side fwd Escape hatch
25	Sea Chest FR 7-8 Vent	25-705-V-038	1.5" BR/BR Ball Valve (Flanged)	Aux mach compt Fwd ,stbd
26	High Sea Chest Stbd Vent	25-705-V-039	1.5" BR/BR Ball Valve (Flanged)	Fwd of stbd gen On top of chest
27	Low Sea Chest Stbd Vent	25-705-V-040	1.5" BR/BR Ball Valve (Flanged)	Fwd of M/E Below deck
28	Low Sea Chest Port Vent	25-705-V-041	1.5" BR/BR Ball Valve (Flanged)	Fwd of M/E Below deck.
29	High Sea Chest Port Vent	25-705-V-042	1.5" BR/BR Ball Valve (Flanged)	Fwd of port gen On top of chest
30	R/O unit sea water supply	825-v-004	1" SDNR Glob valve	Aux mach compt Below deck

2.2 Standards

2.2.1 The following Coast Guard Standards and/or Technical Bulletins must be followed while executing the specification. Copies of these standards and bulletins can be obtained from the VMM

2.2.1.1 Canadian Coast Guard Fleet Safety Manual (DFO 5737)

2.2.1.2 Canadian Coast Guard ISM Lockout/Tagout

2.2.1.3 Canadian Coast Guard ISM Hotwork procedures.

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 Contractor shall remove all listed valves from their original location and place in an area suitable for viewing. All valves shall be suitably tagged such that they may be reinstalled in their respective original locations.

3.1.2 The contractor shall disassemble all valves listed. The globe valves shall have their spindles removed; wire brush cleaned and laid out for inspection. The internals of the valve bodies, valves and sealing surfaces shall be cleaned thoroughly and laid out for inspection.

3.1.3 The butterfly valves shall be removed, disassembled, cleaned and laid out for inspection. The butterfly valves are to be carefully inspected, paying close attention to the seals. Any seal replacements will be with contractor supplied; this cost to be adjusted by PWGSC 1379 action.

3.1.4 Metal – to – metal seated valves shall be lapped to provide a watertight seal.

3.1.5 Any disconnections or other removals necessary for access to the valves to carry out this work shall be included in the quotation.

3.1.6 The contractor shall provide a test method to insure that a watertight seal is maintained between the valve and the valve seat for the screw type valves. This method shall be determined to be acceptable by the attending BV Inspector.

3.1.7 Following all inspections and tests, all valves shall be assembled with new gland packing and jointing material, and installed in good order in their original respective locations.

3.1.8 Contractor shall supply all material required to carry out the specified work. Contractor shall allow $5,000 for valves, parts and additional materials.

3.2 Location

3.2.1 Please see table in Reference 2.1.1.

3.3 Interferences

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

Part 4 – PROOF OF PERFORMANCE

4.1 Inspection

4.1.1 The contractor shall be responsible for all inspections and shall consult with BV, prior to commencement of work, to determine an inspection schedule; at each inspection point, the contractor shall advise the CG Representative, in advance, to allow his/her attendance.

4.1.2 Upon the refloating of the vessel all valves shall be inspected for water tightness. Any leaks are to be repaired by the contractor.

4.2 Testing

4.2.1 Reassembled valves are to be functionally tested by the Chief Engineer for proper operation and watertight to the satisfaction of the Chief Engineer and BV.

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 Two (2) copies of all checklists and reports shall be given to the Chief Engineer along with an electronic copy forwarded to the VMM.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

HD-08 Crab Pot Steel Deflector Plate

Part 1 – SCOPE

1.1 The Contractor shall fabricate and install new deflector plate on Stbd Side Aft Deck as per included Steel Deflector Plate Installation.

1.2 This work shall be carried out in conjunction with the following spec items:

1.2.1 HD-02 Hull Cleaning and Painting

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 CCGS Vladykov – Steel Deflector Plate Installation

2.1.2 ISV25 – 10130RMM11 – Tank Plan

2.2 Standards

2.2.1 The following Coast Guard Standards and/or Technical Bulletins must be followed while executing this specification. Copies of these standards and bulletins can be obtained from the CCG Technical Authority.

2.2.1.1 Canadian Coast Guard Fleet Safety Manual (DFO 5737)

2.2.1.2 Coast Guard ISM Lockout/Tagout

2.2.1.3 Coast Guard ISM Hotwork procedures

2.3 Regulations

2.3.1 N/A

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 Ship's crew will remove as much fuel as possible from the Stbd Wing tank prior to docking.

3.1.2 Contractor shall open up Stbd Wing tank and remove and properly dispose of any remaining fuel. Amount of fuel disposed of shall be recorded and given to the Chief Engineer. Contractor shall supply a quote for each 200L of fuel to be disposed of and the actual amount shall be adjusted with PWGSC 1379 action.

3.1.3 The ship's crew shall lock out the F/O transfer pump and any supply valves to the tank.

3.1.4 The contractor shall ensure that the tanks are certified gas free for entry and hotwork according to the Coast Guard practices as outlined in the Fleet Safety Manual.

3.1.5 Contractor shall use included Steel Deflector Plate Installation Drawing to determine location of defector plate.

3.1.6 Contractor shall confirm exact location of deflector plate installation with Chief Engineer prior to starting work.

3.1.7 Contractor shall make every effort to ensure disturbed Rubber Strake is kept to a minimum.

3.1.8 Contractor shall use included drawings to get detailed instructions on materials, welding procedures, sizes along with other pertinent information.

3.1.9 Contractor shall paint any disturbed areas as per HD-02 Hull Cleaning and Painting.

3.2 Location

3.2.1 Aft Deck Stbd Side

3.2.2 Stbd Wing Fuel Tank

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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/or VMM.

4.2 Testing

4.2.1 All welds on hull to be Dye Penetrant tested prior to coating.

4.3 Certification

4.3.1 N/A

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 N/A

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A

L-01 Annual Electrical Insulation Testing

Part 1 – SCOPE

1.1 The intent of this specification shall be for the contractor to test the insulation resistance of all the electrical distribution systems onboard (Generators, Motors, Panels, Cables/Feeds, Heaters, Etc.) using a 500V DC "Meggar" – type Direct Indicating Ohm tester, provided by the contractor.

1.2 Care shall be taken not to test circuits while electronics (including voltage regulators), which may be damaged by high voltages, are connected.

Part 2 – REFERENCES

2.1 Guidance Drawings/Nameplate Data

2.1.1 Contractor shall use previous years test results as a guideline for what to test and to compare to previous test results.

2.2 Standards

2.2.1 Meggar readings shall be taken and recorded in accordance with the normal Shipboard practices and procedures, keeping in mind that UPS and electronic equipment is susceptible to damage if meggared.

2.2.2 CG Lockout Procedures, ISM Hotwork, Confined Space Entry and Fall Protection Procedures shall be strictly adhered to.

2.3 Regulations

2.3.1 The readings shall be recorded and be acceptable according to the limits stated in the TP 127 Electrical Code for Ships.

2.3.2 The report of readings shall be delivered to the Chief Engineer and attending Class Inspector and be accepted.

2.4 Owner Furnished Equipment

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

Part 3 – TECHNICAL DESCRIPTION

3.1 General

3.1.1 The contractor shall inform the Chief Engineer prior to commencing the Meggar Tests and shall confirm that no electronic equipment is connected or shall be damaged by the tests.

3.1.3 The contractor shall include in their quote an allowance of $1500 for the tracing and repair of any/all ground faults detected. This shall be adjusted up or down by PWGSC 1379 action.

3.2 Location

3.2.1 The location of the breakers can be found on the included Meggar Report.

3.3 Interferences

3.3.1 Contractor is responsible for the identification of interference items, their temporary removal, and 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/or VMM.

4.2 Testing

4.2.1 Any repairs to ground circuits shall be tested before it is considered complete.

4.3 Certification

4.3.1 The contractor shall provide a current copy of the calibration certificates for all meters used during testing.

Part 5 – DELIVERABLES

5.1 Drawings/Reports

5.1.1 The contractor shall deliver two (2) hard copies of the final readings to the Chief Engineer before completion of refit. Contractor shall provide PWGSC Contracting Officer

and VMM with an electronic copy of any test equipment certificates as well as an electronic copy of the signed type written Meggar Report before completion of refit.

5.2 Spares

5.2.1 N/A

5.3 Training

5.3.1 N/A

5.4 Manuals

5.4.1 N/A