

CCGS Vakta

Refit 2018

Specification No: F1782-18C938

Work Period: Nov 13th 2018 to April 15th 2019

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Prepared by:
Marine Engineering Western Region
P.O. Box 6000
9860 W. Saanich Rd.
Victoria BC
V8L 4B2

TABLE OF CONTENTS

G 1.0	GENERAL NOTES	5
G 1.1	Vessel Particulars	5
G 1.2	References	5
G 1.3	Conditions and Definitions	10
G 1.4	Miscellaneous Information	12
G 1.5	Documentation.....	20
G 1.6	Drawings.....	22
G 1.7	Manuals	24
G 1.8	Identification.....	26
S 1.0	SERVICES	30
S 1.1	General.....	30
S 1.2	Transportation.....	30
S 1.3	Electrical Power.....	31
S 1.4	Accommodation/Machinery Area Deck Protection	32
S 1.5	Heating.....	32
S 1.6	Worksite Inspections	33
S 1.7	Fire Protection	33
S 1.8	Contractor's Facility	34
S 1.9	Security	35
S 1.10	Contractor COMPETENCY	35
11.0	HULL AND RELATED STRUCTURES	36
11.1	Transporting Vessel.....	37
11.2	Regulatory Organization.....	40
11.3	UnderWater Hull Inspection (Regulatory Inspection).....	42
11.4	Fuel Tank Inspection (Regulatory Inspection)	44
11.5	Inspection of Storm Valves and Sea Connections (Regulatory Inspection).....	46
11.6	Cathodic Protection	49
11.7	Painting Requirements.....	51
11.8	Painting of Ships Hull Below Waterline	54
11.9	Painting of Hull Above Waterline	56
11.10	Painting of Main Deck.....	59
11.11	Vakta Endurance Betterment.....	61

12.0	PROPULSION AND MANEUVERING	62
12.1	Tail Shaft Inspection (Regulatory Inspection).....	63
12.2	Rudder Removal (Regualtory Inspection).....	65
13.0	ELECTRICAL DISTRIBUTION SYSTEMS	67
13.1	Annual Megger Survey.....	68

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G1.0 GENERAL

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G 1.0 GENERAL NOTES

G 1.1 Vessel Particulars

G 1.1.1 Details

Name:	Vakta
Type:	Multi-Task Cutter
Year Built:	2003
Principal Dimensions	
Length Overall:	16.76 meters, 55 ft
Width Extreme	4.65 meters, 15.25 ft
Height (Mast down)	5.65 meters, 18.5 ft
Tonnage, displ:	25.88 MT
Estimated Weight	65,000 lbs
Propulsion	Caterpillar C12
Propeller Type	Fixed

G 1.1.2 Equipment - Not Used

Equipment	Make	Model	Serial#

G 1.2 References

G 1.2.1 Regulations

G 1.2.1.1 All current editions of regulations, standards, publications, and procedures listed below must be used as reference. The Contractor must ensure all work completed in the specification is done to all pertinent federal and provincial regulations and standards. CCG procedures must be used as a guide if no other regulation takes precedence.

G 1.2.1.2 In the following table “Included – Yes” means that the document will be provided by CCG to the contractor. “Included – No” means that the contractor must obtain the document separately. “Included – N/A” means that the document is not relevant to this specification.

FSM Procedures	Title	Included Yes/No
FSM	Fleet Safety Manual (Latest Edition)	Yes
Publications		
TP 127	Ships Electrical Standards	No
TP 3669	Standards for Navigating Appliances and Equipment	No
TP3177	Standard for the Control of Gas Hazards in Vessels to be Repaired or Altered	No
TP 11469	Guide to Structural Fire Protection	No
TP 14231	Marine Occupational Health and Safety Program	No
TP 14612	Procedures for approval of Life-saving appliances and fire safety systems, Equipment and Products	No

Standards		
CSA W47.1	Certification of Companies for Fusion Welding of Steel Structures Division 2 Certification	No
CSA W47.2	Certification of Companies for Fusion Welding of Aluminum	No
CSA W59	Welded Steel Construction – Metal Arc Welding	No
CSA W59.2	Welded Aluminum Construction	No
ISO 9712:2005	International Standards for NDT	No
CT-043-EQ-EG-001-E	Welding Specification Canadian Coast Guard	Yes
SSPC	The Society for Protective Coatings	No
ISO 8501-1:2007	Preparation of steel substrates before application of paints and related products	No
ISO 10816-1:1995	Mechanical vibration -- Evaluation of machine vibration by measurements on non-rotating parts -- Part 1: General guidelines	No
	CAD standard	
Technical Documents		
	International Paint InterSpec.	Yes
	Canadian Coast Guard Specifications for the Installation of Shipboard Electronic Equipment	Yes
Regulations		
MOHS	Maritime Occupational Health and Safety	No
CSA	Canada Shipping Act 2001	No
Machinery Regs.	Marine Machinery Regulations	No
Hull Regs.	Hull Inspection Regulations	No
Canada Labour Code	Canada Labour Code	No
WorkSafe BC.	Occupational Health and Safety (OHS) Regulation http://www2.worksafebc.com/publications/OHSRegulation/Home.asp?_ga=1.6448368.352535453.1408987357	No

G 1.2.2 Guidance Drawings

G 1.2.2.1 The following Drawings must be considered as Guidance Drawings as defined in the Drawings section of the General Notes.

G 1.2.2.2 Additional Drawings are listed in Annex A

Drawing Number	REFERENCE DRAWING TITLE
V11-CMV11-146 DE	Docking Plan
V11-CMV11-101, V11-146-2	General Arrangement sheet 1 and 2
V11-CMV11-140	Accommodation Arrangement
V11-CMV11-143	Tank Capacity Plan
V11-CMV11-144 1&2	Tank Vent and Sounding sheet 1 and 2
V11-CMV11-112	Electric Power Distribution AC and DC
V11-CMV11-112	Electric Three Line Power Dist. System
V11-CMV11-107	Domestic Fresh Water System
V11-CMV11-108	Sewage and Sanitary Drains
V11-CMV11-119	Shell Expansion

G 1.2.3 Abbreviations

ACM	Asbestos Containing Material
CA	Contract Authority (PSPC)
CCG	Canadian Coast Guard
CFM	Contractor Furnished Material and/or equipment
CLC	Canada Labour Code
CSA	Canadian Standards Association
CWB	Canadian Welding Bureau
DFO/CCG	Department of Fisheries and Oceans, Canadian Coast Guard
DFT	Dry Film Thickness
FSM	Fleet Safety Manual (CCG)
FSR	Manufacturer's Field Service Representative
GSM	Government Supplied Material and/or equipment
HC	Health Canada
IACS	International Association of Classification Societies
IEEE	The Institute of Electrical & Electronic Engineers Inc.
ITS – ME	Integrated Technical Services, Marine Engineering
ITS – E&I	Integrated Technical Services, Electronics & Informatics
LOA	Length Overall
MSDS	Material Safety Data Sheet
NDT	Non Destructive Testing
OHS	Occupational Health and Safety
PSPC	Public Service and Procurement Canada
PWGSC	Public Works and Government Services Canada
SSMS	Safety & Security Management System
RO	Recognized Organization as defined by Canada Shipping Act.
TA	Technical Authority -CCG Superintendent, Marine Engineering Western Region, or her delegated Representative.
TBS	Treasury Board of Canada Secretariat
TCMS	Transport Canada Marine Safety
TI	Technical Inspector – CCG delegated.
VCA	Vessel Condition Survey
VLE	Vessel Life Extension
WCB	WorkSafe BC

G 1.3 Conditions and Definitions

G 1.3.1 The following conditions and definitions are applicable to all work contained in the Specifications and are intended to outline the quality of workmanship and practice that is the minimum acceptable level:

- a) the word "install" means that the Contractor must connect mechanically and electrically and provide the labour and materiel to complete the installation;
- b) the word "reinstall" means a piece of equipment that the Contractor has affected repairs on and is to be returned/installed in its original location and be mechanically and electrically connected. The Contractor must provide the labour and materiel to complete the reinstallation;
- c) the word "disconnect" means the Contractor must mechanically and electrically disconnect the piece of equipment of all piping, wiring, seatings and other attachments permitting the removal of the unit as a whole;
- d) the word "remove" means that the Contractor must provide all labour and materiel to disconnect mechanically and electrically and remove the unit, equipment, materiel, or system in its entirety. Part of the removal process is to blank openings, restore disturbed insulation and paint;
- e) the word "relocate" means that the Contractor must provide all labour and material to remove the unit, piece of equipment, or system and to install the same unit, piece of equipment, or system in the new location;
- f) the term "or equivalent" means a substitute which has equal characteristics i.e. (size, materiel type, life, weight, input, and output) as approved by the TA. A comparison of the general specifications must be provided to the TA for the equipment specified and the "or equivalent" (i.e. old compared to the new);
- g) the term "overhaul" as applied to any mechanical equipment, structure or system comprises: disassembly into component parts, cleaning, examination of parts for defects, gauging of parts for wear, reporting of parts worn beyond specification limits or otherwise defective and reassembly followed by specification adjustments, tests, and functional trials;
- h) the word "disassemble" means that the Contractor must provide all labour to take apart, piece by piece, the equipment, machinery or system to be examined or repaired;

- i) the word "reassemble" means that the Contractor must provide all labour and material to put together, piece by piece, the equipment, machinery or system on completion of examination or repair
- j) the words "Additional Work Procedures" means the procedures as defined in ANNEX G - PROCEDURE FOR PROCESSING UNSCHEDULED WORK and includes any additional work required on a system, sub-system or equipment which the original specification did not specify;
- k) the word "calibrate" means the adjustment of readings and measurements to a known standard;
- l) the word "check" means that the Contractor must provide labour to find faults by sighting, feeling or listening. The checking of any equipment does not involve the disturbance or removal of parts, components or sub-assemblies;
- m) the word "examine" means that the Contractor must provide labour for the process of systematically examining, checking and testing equipment, records or administrative procedures to detect actual or potential defects or errors;
- n) the word "test" means that the Contractor must provide labour to conduct the operation of a unit in relation to a stated standard or procedure;
- o) the words "set-to-work" means the tuning, alignment and adjustment of equipment/systems after a satisfactory installation And the inspection to make the equipment/systems ready for technical acceptance trials;
- p) the word "trials" is an element of QA that means an action(s) by which the Contractor proves by a visual or instrumental presentation that the equipment or system satisfies the requirements of the specified trials agenda; and
- q) the term "functional test" means operation of a piece of equipment in all its normal operating modes and throughout its operating range to establish that it will perform its designed function within normal operating parameters as indicated in the manufacturer's documentation. It may be conducted before and afterdisassembly.

G 1.4 Miscellaneous Information

G 1.4.1 Occupational Health and Safety

- G 1.4.1.1 The Contractor and all sub-contractors must follow Occupational Health and Safety (OHS) procedures in accordance with applicable federal and provincial OHS regulations ensuring that Contractor activities are carried out in a safe manner and do not endanger the safety of any personnel. The Contractor and Contractor's employees will not have access to the vessel's washrooms and mess facilities. The Contractor must provide the necessary amenities as required.
- G 1.4.1.2 Where "Safety Management System" is referenced in this document, it is referring to the Contractor's Safety Management System, which must be in effect while in the Contractor's Care and Custody and must be in accordance with the applicable OHS regulations and procedures.
- G 1.4.1.3 When the Contractor works on the vessel while in the Care and Custody of the Canadian Coast Guard, the Safety Management System of CCG must be followed.
- G 1.4.1.4 The Contractor must identify a specified person that is responsible for the safety management of the work site. The Safety Manager must insure that daily safety rounds are carried out and that safety issues are identified and safety precautions are maintained.
- G 1.4.1.5 Areas that pose a hazard as a result of the specification work must be secured and clearly identified by the Contractor with signage to advise and protect all personnel from the hazard in accordance with applicable regulations.

G 1.4.2 Lead Paint and Paint Coatings

- G 1.4.2.1 The Contractor must not use lead based paints.
- G 1.4.2.2 CCG ships have been painted with lead based paints in the past and as a result some of the Contractor's processes such as grinding, welding and burning may release this lead from the coatings.

G 1.4.3 Asbestos Containing Materials (ACM)

- G 1.4.3.1 The Contractor must use insulation and brake material that contains 0% ACM.
- G 1.4.3.2 The Contractor will be supplied the most recent Asbestos Risk Assessment Report and Asbestos Management Plan by CCG prior to Assumption of Custody.
- G 1.4.3.3 Handling of any asbestos containing materials must be performed by trained personnel and/or a company certified in the removal of asbestos in accordance with Federal, Provincial and Municipal regulations.
- G 1.4.3.4 The Contractor must provide the TA with disposal certificates for all asbestos containing material removed from the vessel indicating that the disposal was in accordance with Federal, Provincial and Municipal regulations in effect.
- G 1.4.3.5 The Contractor must provide an "Observation Report (OR)" with reference to any concerns or intentions in regards to asbestos containing materials not already specified. The Contractor is to identify any materials that are suspected to contain asbestos prior to any work being initiated. Any approved work resulting from the OR will follow the Additional Work Procedures.

G 1.4.4 Confined Spaces

- G 1.4.4.1 Prior to commencing work in any confined space, the Contractor must ensure that a qualified person issues a "Gas Free Certificate" for that space. Certificates must specify, "Safe for persons" or "safe for hot work" as appropriate. Contractor must adhere to the safety management system requirements as determined in the Pre-Work Meeting. All copies of certificates generated are to be provided to the TA in accordance with the Documentation section of the General Notes.
- G 1.4.4.2 Any entry into confined spaces onboard the vessel during the contract period must be conducted in accordance with the safety management system as determined in the Pre-Work Meeting.

G 1.4.5 Hot Work

G 1.4.5.1 The Contractor must, as a minimum, ensure the following items are followed when conducting hot work while the vessel is in their care and custody:

- a) The compartment(s) affected must be certified gas free by a qualified person. The Contractor must provide all certificates to the TA in accordance with the Documentation section of the General Notes. Certificates must specify, "Safe for persons" or "safe for hot work" as appropriate. The Contractor must post a copy of all certificates at the entrance to the affected spaces;
- b) All portable combustible materials within 2m of hot work must be removed from the vicinity;
- c) Protective material must be used to prevent the spread of sparks, protecting electrical cables and other services;
- d) Fire sentries must be provided in each space and in the adjacent space where welding, grinding, or burning is being carried out on bulkheads, deck-heads or decks. Fire sentries must be provided with an appropriate fire extinguisher (Contractor supplied) and must be trained in its use. The fire sentry must maintain a watch in his designated area for at least thirty (30) minutes after any hot work has been completed.

G 1.4.5.2 Any hot work carried out onboard the vessel during the contract period must be conducted in accordance with the safety management system. A copy of the site generated hot work permits must be provided to the TA in accordance with the Documentation section of the General Notes in accordance with the specification item generating the required work.

G 1.4.6 Work Aloft

G 1.4.6.1 Any work aloft onboard the vessel during the maintenance/refit period must be conducted in accordance with the safety management system. Notices must be placed to prevent operation of Radars while personnel are working aloft on the mast or on the wheelhouse top.

G 1.4.7 Electrical Equipment

G 1.4.7.1 When working on electrically operated equipment, the following precautions must be taken at a minimum:

- a) All electrical equipment undergoing work must be isolated at the main power and alternate distribution panel;
- b) Electrical lock-outs must be used to isolate the equipment and electrical caution tags posted at the main power and distribution panel on those switches supplying equipment under maintenance and verification made at the terminals to ensure power is not present.
- c) Only after completion of the work must the lock-outs and electrical caution tags be removed and the switches engaged.

G 1.4.7.2 Any lock-out requirements onboard the vessel during the contract period must be conducted in accordance with the safety management system.

G 1.4.7.3 The TA must be notified of all such ongoing work.

G 1.4.8 Workplace Hazardous Materials Information System (WHIMS)

G 1.4.8.1 The Contractor must provide the TA with Material Safety Data Sheets (MSDS) for all Contractor and sub-contractor supplied WHIMS controlled products. MSDS sheets are to be the formats requested in the Documentation section of the General Notes.

G 1.4.8.2 All MSDS sheets must be maintained in accordance with OHS procedures.

G 1.4.8.3 The TA will provide the Contractor with access to MSD sheets for all controlled products on the ship for all specified work items on request.

G 1.4.9 Smoking in the Work Space

G 1.4.9.1 The Contractor must ensure compliance with the Non- Smokers' Health Act. The Contractor must ensure that there is absolutely no smoking onboard the vessel by their employees, sub-contractors, including the employees of any sub-contractors.

G 1.4.10 Touch-up / Disturbed Paint

- G 1.4.10.1 The Contractor must prepare and coat all touch-up work in accordance with the paint specification provided for the particular area involved in accordance with - PAINT SPECIFICATIONS - CCGS Vakta INTERSPEC.

G 1.4.11 Contractor Furnished Materials (CFM) and Tools

- G 1.4.11.1 The Contractor must ensure replacement material such as jointing, packing, insulation, small hardware, oils, lubricants, cleaning solvents, preservatives, paints, coatings etc. are in accordance with the equipment manufacturer's drawings, manuals and/or instructions.
- G 1.4.11.2 Where no particular item is specified or where substitution must be made, the Contractor must submit an Observation Report indicating the substitution or item not specified to the TA. The Contractor must provide information about materials used, certificate of grade and quality of various materials to the TA prior to use.
- G 1.4.11.3 The Contractor must provide all equipment, devices, tools and machinery such as crane, staging, scaffolding, hoarding, man-lift and rigging necessary for the completion of the work in this specification.
- G 1.4.11.4 The Contractor must deliver and store all new CFM equipment at their facility. The CFM must be stored in a secure, environmentally controlled space in accordance with the equipment storage section of this specification.

G 1.4.12 Government Supplied Materials (GSM) & Tools

- G 1.4.12.1 All tools are Contractor supplied unless otherwise stated in the technical specifications.
- G 1.4.12.2 Where tools are supplied by the TA they must be returned by the Contractor in the same condition as when they were borrowed. Borrowed tools must be inventoried and signed for by the Contractor on receipt and return to the TA.
- G 1.4.12.3 Any GSM not specifically stated in the Technical Specification must be received by the Contractor and stored in a humidity controlled heated space of sufficient size. These activities are to be covered by the Procedures for Design Change or Additional Work. (PSPC 1379).

G 1.4.13 Storage

- G 1.4.13.1 Equipment (i.e. covers, cowling and other items that may need to be removed and stored) must be stored in a humidity controlled heated space of sufficient size.
- G 1.4.13.2 All equipment and items must be stored in such a manner so as to be easily accessible for inspection. No items are to be stored directly on floors.

G 1.4.14 Regulatory Inspections and/or Class Surveys

- G 1.4.14.1 The Contractor must contact, coordinate, schedule, and be completely prepared for all regulatory inspections and surveys by the applicable authority: i.e. TCMS, HC, Environment Canada or others as indicated by individual specifications. TCMS inspection fees to be billed by TCMS directly to Coast Guard.
- G 1.4.14.2 Documentation generated by the above inspections and/or surveys indicating that the inspections and/or surveys were conducted (i.e. original signed and dated certificates) must be provided to the TA in accordance with the “Documentation” Section of these General Notes.
- G 1.4.14.3 The Contractor must not substitute inspection by the TA for the required regulatory inspections.
- G 1.4.14.4 The Contractor must provide timely advance notification (minimum of 2 working days) of scheduled regulatory inspections to the TA so they may witness the inspection.
- G 1.4.14.5 The Contractor must pay all costs and fees associated with TCMS, HC, Environment Canada, or any other Inspection required by the specification unless otherwise indicated.

G 1.4.15 Contractor Inspections

- G 1.4.15.1 The Contractor must afford the opportunity for the TA to conduct an inspection with the contractor on the condition and location of items to be removed prior to either carrying out the specified work or gaining access to a location to carry out the work.
- G 1.4.15.2 The Contractor must take a before picture of conditions prior to removing any items. These photographs must be in accordance with the Documentation section of the General note, named according to the applicable specification section.

G 1.4.15.3 Prior to the close out of any item, the Contractor must afford the TA the opportunity to verify that the work has been completed in accordance with the specification. At that time the contractor must have available all photographs, documents, reports, and trials in relation to the item being closed out as completed.

G 1.4.16 Recording of Work in Progress

G 1.4.16.1 The TA may record any work in progress using various means including, but not limited to photography and video, digital or film.

G 1.4.17 Access for Maintenance, Installation, and Removal.

G 1.4.17.1 The layout of newly installed machinery and equipment must be designed and constructed to permit ready access for routine maintenance, operational checks and operational inspections without disturbance of other machinery, equipment or structure.

G 1.4.17.2 The Contractor must determine best routes for installing and removing equipment. All lifting points currently fitted on the ship must be treated as uncertified, and must be certified before use by the Contractor unless marked otherwise

G 1.4.17.3 Temporary lifting points installed by the contractor must be removed prior to transfer of custody with welds ground flush, and paint coatings applied in accordance with the Interspec paint specification.

G 1.4.17.4 Manufacturer's recommended removal clearances must be allowed for.

G 1.4.17.5 After equipment installation and/or removal, the Contractor must make good all equipment relocations, blemishes, and penetrations and must return the affected areas of the ship to the As-Delivered working condition.

G 1.4.18 Assembly of Components

- G 1.4.18.1 The Contractor must ensure that during installation of specified equipment, that parts and assembled equipment are cleaned of smudges, spatter or excess solder, weld metal and metal chips or any other foreign material which might detract from the intended operation, function, or appearance of the equipment. (This would include any particles that could loosen or become dislodged during the normal expected life of the equipment). All corrosive material must be removed. This cleaning must take place before the parts are assembled into the equipment.
- G 1.4.18.2 Covers, cowlings and components damaged by the Contractor must be replaced with a new CFM cover, cowling, or component.
- G 1.4.18.3 Where torque specifications are not provided by the manufacturer, standard SAE nut and bolt torques must be used.

G 1.4.19 Protection of Equipment

- G 1.4.19.1 The Contractor must take measures to ensure that surfaces and components of equipment installed on the vessel are protected against damage, soiling, and contamination as a result of contracted work.
- G 1.4.19.2 All electrical and electronic equipment and components must be protected during the contract against physical damage, internal damage, and by the effects of adverse temperatures or other environmental conditions.
- G 1.4.19.3 The Contractor must protect equipment that could be damaged as a result of movement of materials and equipment nearby. The Contractor must also protect equipment from nearby sources of contamination including but not limited to burning, welding, grinding and painting.
- G 1.4.19.4 Any damage to surfaces, equipment, furnishings or decor incurred prior to acceptance must be returned to As Delivered condition by the Contractor.
- G 1.4.19.5 All openings in machinery and/or systems prior to connections being made must be kept covered by suitable inserts or covers at all times.
- G 1.4.19.6 The Contractor must obtain and follow instructions from its sub-Contractors for any special protection required for their equipment during the project work. Such instructions must be made available to the TA.
- G 1.4.19.7 Physical protection including but not limited to plastic sheets, fireproof covers, heavy weight material covers, wood plugs, wood encasements and heaters must be used as required.

G 1.4.19.8 The Contractor must protect the vessel from the possibility of vermin infestation (insect/mammal/bird). If an infestation does occur during the contract period the Contractor must bear all costs to ensure the vessel is made vermin free before the vessel's departure and contract completion.

G 1.5 Documentation

G 1.5.1 Documentation is identified as a deliverable in the specification item requesting it.

G 1.5.2 Data Book

G 1.5.2.1 The Contractor must provide all specified deliverables in both electronic and paper formats. There must be 2 paper copies of each document, in two separate binders, as part of the contractor's QA program. An electronic copy of all documentation must also be provided to the TA in accordance with the formats described below.

G 1.5.2.2 All copies of documents generated as a result of specified deliverables will be referred to as the "Data Book".

G 1.5.2.3 The Contractor must provide the TA all the files generated as part of the Data Book. These must be received prior to the contract being considered complete. The files must be in hard format (CD-ROM, DVD-ROM, Flash Drive / Memory Stick). Each specification item must have its own folder named according to the specification item. For example "G1.0 General Notes".

G 1.5.2.4 Any documentation, media, and reports, that are the result of Additional Work, must also be included as part of the Data Book.

G 1.5.3 File Naming

G 1.5.3.1 File naming must be in the following format: *Specification#.# – Date (yyyy-mm-dd) – File Name Describing Information*. For Example: "G1.0 – 2013-12-01 – Details of file naming.pdf".

G 1.5.4 E-mails

- G 1.5.4.1 Any files sent to the CA/TA by e-mail must be named as per the “File Naming” section of this specification. All files that are e-mailed must have in the subject name: “Contract# - DATA BOOK – *Date – Specification #*”. For Example: ***F1782-15C730 – DATA BOOK – 2014-11-30 – G1.0 General Notes*** . Files sent by e-mail must also be included in the “Data Book”.

G 1.5.5 File Formatting

- G 1.5.5.1 All documentation, reports, test results, certificates, or data obtained by the contractor in paper form must be scanned into unprotected (preferably searchable) Adobe PDF formatted files and named according to the File Naming section of this specification.
- G 1.5.5.2 All reports, test results, certificates, or raw data obtained by the contractor in electronic format must be converted to unprotected Adobe PDF formatted files and named according to the “File Naming” section of this specification. Both the original and the converted copy are to be provided as part of the Data Book.

G 1.5.6 Photographs

- G 1.5.6.1 All photographs obtained by the contractor as requested in the specification must be provided in .JPG formatted files at a resolution of at least 640 x 480 and named according to the “File Naming” section of this specification.

G 1.5.7 Measurements, Calibrations, and Readings.

- G 1.5.7.1 All measurements, calibrations and readings recorded, must be signed by the person taking the measurements, dated and scanned into electronic format as part of the Data Book.
- G 1.5.7.2 Recorded dimensions must be to a precision of three decimal places (unless otherwise stated) in the measuring system currently in use on the vessel.
- G 1.5.7.3 The Contractor must provide to the TA current and valid calibration certificates for all instrumentation used in the Test and Trials Plan showing that the instruments have been calibrated in accordance with the manufacturer’s instructions. These copies are to be provided as part of the Data Book under any specification where measurements are required.

G 1.5.8 Test Inspection Records and Certificates

- G 1.5.8.1 Test Inspection Records and Certificates are identified as a deliverable in the individual specification item requesting them.
- G 1.5.8.2 Test Inspection Records and Certificates must be included as a separate section in the DATA BOOK and indexed/arranged in numeric order by specification number.
- G 1.5.8.3 The Contractor is responsible for maintaining a complete and accurate record of all tests and trials conducted on the vessel and on each piece of equipment. Prior to the commencement of a trial, all relevant documentation and associated test sheets, including shop test data, must be complete and attached to the trials agenda.
- G 1.5.8.4 All tests and trials data must be legible both in hard copy and electronic format. If necessary, handwritten records may require transcription into electronic format in order to be acceptable. The original must be signed by TCM, the TA, the Contractor and where necessary by the sub-Contractors and/or FSRs who witnessed the tests. All the Data must be submitted to the TA in accordance with the “Documentation” section of these General Notes.

G 1.6 Drawings

- G 1.6.1 This section, to be referred to as the Drawings section of the General Notes, is intended to be used as the minimum standards when specified deliverables are drawings.
- G 1.6.2 The contractor must have on staff or through a sub-contractor a person qualified and experienced in the use of AutoCAD who will create or modify drawings that result from the work.
- G 1.6.3 The Contractor must comply with the Canadian Coast Guard National CAD Standards titled “*Computer Aided Design (CAD) using AUTOCAD*” provided.
- G 1.6.4 Drawing disks must be clearly labeled with the Contract Number, file names and drawing numbers. If a complete listing exceeds the label size, a “readme.txt” file in ASCII format must be provided with each disk. A printed copy of the Readme file must accompany each disk. Disks must be labeled As-Fitted drawings for those drawings that have been approved and finalized.
- G 1.6.5 Final As-Fitted prints/plots must not contain markings or corrections by hand (i.e. marker, pen, pencil, etc.). Drawings containing mark-ups must be revised and re-printed/plotted.
- G 1.6.6 The Contractor must prepare all the working drawings necessary for the project requirements and modernization work.

G 1.6.7 The Contractor must furnish all drawings required by sub-Contractors, trades and other consultants.

G 1.6.8 Schematic drawings of systems must include all pertinent system information, including sizes, dimensions, labeling, equipment locations, and all information relating to system fittings.

G 1.6.9 The Contractor must have in place a complete system of documenting and controlling all drawing revisions affected by the work. Drawing numbering system and titles must match the original drawings for clarity and include a revision number with date.

G 1.6.10 Guidance Drawings

G 1.6.10.1 All technical guidance drawings are issued to the Contractor for guidance purposes only. It is the responsibility of the Contractor to develop working drawings and to ensure that all such drawings receive applicable regulatory approval. The Contractor is to note that not all technical guidance drawings supplied are As-Fitted drawings. It is the responsibility of the Contractor to physically verify all affected items.

G 1.6.10.2 All departures from the provided guidance drawings and project specifications must be clearly indicated by the Contractor and written approval obtained from the TA before carrying out such alterations or departures.

G 1.6.10.3 Specification deviations must be documented using an Observation Report.

G 1.6.11 As Fitted Drawings

G 1.6.11.1 As-Fitted Drawings are identified as a deliverable in the specification item requesting them.

G 1.6.11.2 Upon completion of specified work, the Contractor must transfer the mark-ups from any working drawings. These drawings become the As-Fitted drawings for the project work. The Contractor is responsible for providing as-fitted drawings affected by the project work to the TA prior to completion of the contract. The drawings must be submitted in the following formats:

a) One (1) electronic copy of the latest revision of each As-Fitted drawing.

G 1.6.11.3 Marked up drawings are to be AutoCAD drawings where original AutoCAD drawings are provided. If no AutoCAD drawings were provided then scanned files (raster format) must be supplied to CCG in one of the following formats:

a) DXF format;

- b) TIFF format;
- c) PDF format.

G 1.7 Manuals

G 1.7.1 This section, to be referred to as the Manuals section of the General Notes, is intended to be used as the minimum standards when specified deliverables are manuals.

G 1.7.2 General

G 1.7.2.1 Instruction Manuals must be individually bound in a hard cover 3 ring book format with a page size of 8 1/2" x 11". Drawings of a larger size must be concertina folded to suit. The covers must have the following information printed thereon:

- a) CCGS Vakta;
- b) Equipment Identification;
- c) Equipment Manufacturer;
- d) Date.

G 1.7.2.2 Plastic tabbed indices must be provided for all sections of the manuals. Major equipment components must be subdivided into separate sections of the manuals.

G 1.7.2.3 A master index must be provided at the beginning of each binder indicating all items included in each section.

G 1.7.2.4 A list of names, addresses and telephone numbers of contacts associated with the equipment manufacturers must be provided that can be used after the project completion for maintenance and information data purposes.

G 1.7.2.5 A copy of the final reviewed and approved As-Fitted drawing(s) must be provided within the maintenance manual.

G 1.7.2.6 One (1) electronic copy of each manual must be provided in accordance with the Data Book section of this specification.

G 1.7.2.7 Two (2) paper copies of manuals and data sheets must be supplied in English for all Contractor Furnished Equipment items.

G 1.7.3 Operation Manuals – As-Fitted

G 1.7.3.1 Operation manuals must include the following items:

- a) General description of equipment operating sequence;
- b) Step by step procedure to follow in commissioning the equipment;
- c) Schematic wiring diagram for the fitted equipment; and
- d) All pertinent equipment performance criteria.

G 1.7.3.2 Where software/hardware systems are fitted, the operation manual must include the full software documentation manual in paper form for the system and an electronic copy in accordance with the Documentation Section. The minimum software documentation must include:

- a) System level diagrams describing the overall scheme of the software/hardware system;
- b) The functional specifications, which must describe in detail the functional capabilities of the system and each software components; and
- c) Project specific program listings including all comments describing the details of the code functions.

G 1.7.4 Maintenance Manuals – As-Fitted

G 1.7.4.1 Maintenance manuals must include:

- a) Manufacturer's maintenance instructions for each item of the equipment requiring maintenance activity;
- b) Instructions must include installation instructions, part numbers, part lists, master drawings and exploded views with part identification for all mechanical, electrical and electronic parts, name of suppliers;
- c) Summary list of each item of the equipment requiring lubrication, indicating the name of the equipment item, location of all points of lubrication, type of lubricant recommended, and frequency of lubrication; and
- d) Troubleshooting sections must be included for all equipment in the maintenance manual under a separate heading.

G 1.8 Identification

G 1.8.1 Nameplates

- G 1.8.1.1 Nameplates are identified as a deliverable in the individual specification item requesting them.
- G 1.8.1.2 All nameplates must be in English, except where required in English and French by TCM for reasons of emergency operation.
- G 1.8.1.3 Lettering must be clear and concise with the minimum use of abbreviations. Primary information must be given in larger size lettering than secondary information.
- G 1.8.1.4 The type of nameplates must suit the location in the vessel as specified below:

G 1.8.1.5 Plastic:

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

G 1.8.1.6 Engraved on Metal:

- a) Must be used in machinery spaces and where exposed to the weather or susceptible to covering by paint, oil or grease. Nameplates exposed to weather must be stainless steel or brass. Engraved metal nameplates must be of stainless steel or brass with lettering accentuated by means of black wax unless otherwise noted, and secured with stainless steel or brass machine screws.

G 1.8.1.7 A complete list of nameplates, detailing size of plate, size of lettering and inscription must be submitted to the TA for review prior to ordering and/or manufacturing.

G 1.8.2 Wire Labelling

- G 1.8.2.1 Wire Labelling is identified as a deliverable in the individual specification item requesting them.
- G 1.8.2.2 All wiring in panels specified to be labelled must be labeled with the Cable Number and their conductor # unless otherwise specified in equipment installation drawings. Wire labels must be installed on wire end terminations and on the entry and exit thru bulkheads, on glands or on junction boxes.

CCGS Vakta
Refit 2018

Specification No: F1782-18C938

S1.0 SERVICES

Prepared by:

Marine Engineering Western Region
P.O. Box 6000
9860 W. Saanich Rd.
Victoria BC
V8L 4B2

S 1.0 SERVICES

S 1.1 GENERAL

S 1.1.1 The Contractor must supply the following services to the vessel for the entire work period and disconnect upon completion of the work period. The Contractor must re-establish all services if the vessel is moved during the work period.

S 1.1.2 The Contractor must supply all material, hoses, cables, etc. and labour required to connect and disconnect the services to the vessel. Unless otherwise stated these services must be available 24 hours a day 7 days a week for the entire contract period.

S 1.1.3 All staging, crantage, screens, lighting, and any other support service, equipment, and material necessary to carry out the work identified in these specifications must be Contractor supplied.

S 1.2 TRANSPORTATION

S 1.2.1 The Vakta must be transported to the contractor's facility and picked up from the contractor's facility by the Contractor as per 11.1

S 1.3 ELECTRICAL POWER

- S 1.3.1 The Contractor must supply 120 Volt Alternating Current, 60 hertz, Single Phase, 60 Ampere electrical power, through the vessel's shore power system, for the duration of the contract.
- S 1.3.2 The Vessel's shore power cable and associated plug connection may be used by the Contractor. However, the Contractor is responsible to replace the entire length of cable with an equal quality, size, and length of cable should the shore power cable be damaged during the contract period. Damage to the shore power cable also includes damage to the plug-in connections which must be replaced if damaged. Splicing any section of the cable is not acceptable.
- S 1.3.3 The Cable condition must be inspected at the start and completion of the work period. The Contractor and the TA must record in writing all defects prior to the start of the contract period and all parties must sign the original document. Photographs must be taken of general condition and close-ups of existing damage. All photographs and documents are to be provided to the TA in accordance with the Documentation section of the General Notes.
- S 1.3.4 When connected to shore power, it must be connected to a Contractor supplied kilowatt-hour meter. The Contractor must read the kilowatt-hour meter when the connection is made and once again when the power is disconnected. Both readings of the meter must be witnessed by the TA and recorded.
- S 1.3.5 If temporary lighting is required for any of the work, the temporary power system must be feed through a Contractor supplied kilowatt-hour meter. The Contractor must read the kilowatt-hour meter when the connection is made and once again when the power is disconnected. Both readings of the meter must be witnessed by the TA and recorded.
- S 1.3.6 Temporary lighting and power must meet provincial regulations for safe work conditions and there must be sufficient number of lights set up to provide safe passage through the accommodation and machinery spaces.
- S 1.3.7 The Contractor must supply a price quote per kilowatt-hour for electrical power for the duration of the work period. The final price for this item shall be determined at the end of the contract once the meter has been read. **The contractor is to bid on 10,000 Kw/hr of electricity consumed by the vessel during the work period.** The final power consumption total shall be prorated and adjusted up or down by PSPC 1379 action.

S 1.4 ACCOMMODATION/MACHINERY AREA DECK PROTECTION

- S 1.4.1 The Contractor must supply after strip out and installation of new accommodation space must install at minimum ¼” hard board deck covering protection on all accommodation decks that workers will access during this work period. Hard board edges and joints must be taped and damaged protection must be repaired within 24 hours of receiving damage. Cardboard is not acceptable.
- S 1.4.2 The Contractor must protect decks in machinery spaces from damage to structure and coating systems during the process of specified work. Damage to the coating systems or structure of machinery spaces decks must be repaired by the Contractor. Any coatings must be applied according to manufacturer’s specifications.
- S 1.4.3 Removal and storage of components that may be subject to damage during the work period, such as deck plates, grating, etc. is the responsibility of the Contractor.

S 1.5 HEATING

- S 1.5.1 The Contractor must supply the heating required onboard and around the vessel to facilitate specified work. The internal temperature of the vessel must remain above 5 degrees c for the duration of the work period.

S 1.6 WORKSITE INSPECTIONS

- S 1.6.1 Before the Contractor starts any work on the vessel, the Contractor's Quality Assurance Representative and the TA must walk through each space and area where work is to take place, including access and removal routes and areas adjacent to those where the work is to be done as a result of this specification. The Walk-through must occur during vessel demobilization and the Contractor's Quality Assurance Representative must identify all items that are to be removed or secured prior to the Contractor assuming Care and Custody of the Vessel.
- S 1.6.2 The Contractor's Quality Assurance Representative must take digital pictures of each area showing the outfit therein. Each picture must be dated and named as to the location on the vessel and that it represents As-Delivered conditions. These photographs must be in the format; as well as named, in accordance with the Documentation section of the General Notes. A Copy of these photographs must be provided to the TA within 48 hours of the start of contract on a memory stick, CD, or DVD.
- S 1.6.3 During the work period, the Contractor must maintain work areas in the vessel, in a clean condition, free from debris and remove garbage daily.
- S 1.6.4 Upon completion of the contract, the Contractor must return the vessel to the As-Delivered state of cleanliness.
- S 1.6.5 Prior to the completion of the Acceptance Document, the Contractor's QA Representative, and the TA must perform an inspection of the vessel to view all areas where work was performed by the Contractor.
- S 1.6.6 Copies of all photographs, documentation, and inspection sign off sheets must be provided in accordance with the Documentation section of the General Notes.

S 1.7 FIRE PROTECTION

- S 1.7.1 The Contractor must ensure protection against fire 24 hours/day and 7 days/week throughout the contract period.
- S 1.7.2 The Contractor must ensure the isolation, removal, installation and reactivation of the shipboard fire detection and suppression systems or any components thereof, is performed by a qualified technician. When the shipboard fire detection or fire suppression system is deactivated or disabled by the Contractor during the contract period, the system must be recertified by a qualified technician prior to the end of the work period, as fully functional. A signed and dated original copy of the certificate must be delivered according to the Documentation section of the General Notes.

- S 1.7.3 The Contractor must have a certified fire contractor disable the fixed fire system at the start of the work period and the contractor must have a certified fire contractor enable the fixed fire system at the completion of work.
- S 1.7.4 The Contractor must note that failure to take the necessary precautions while performing work on the vessel's fire suppression system(s) could result in the accidental discharge of the fire suppression agent(s). The Contractor must recharge and certify at their cost, container(s) or systems that are discharged as a result of the contractor's or subcontractor's activities.
- S 1.7.5 The Contractors work space must be fitted with a fire detection system that alerts the local fire department.

S 1.8 CONTRACTOR'S FACILITY

- S 1.8.1 The Contractor must have a covered work space that the vessel will fit inside of with a minimum dimension of (LxWxH) of 80 feet by 24 feet by 18 feet. The vessel is to remain inside the work space for the duration of the work period unless agreed to by the TA
- S 1.8.2 The Contractor's work space must have a concrete floor of a minimum thickness of 6 inches and it must be able to support the weight of the vessel as per the docking plan.
- S 1.8.3 The Contractor must be a CWB W47.2 approved company.
- S 1.8.4 The Contractor's work space must be able to maintain a minimum internal temperature of 5c throughout the duration of the work period for the covered work space.
- S 1.8.5 The Contractor must be able to sand blast and paint inside their work space and maintain environmental parameters as defined in the International Interspec during the coating process. Contractor is to insure that the work space is suitable for blasting and painting work meeting provincial regulatory work safe regulation
- S 1.8.6 CANADA OFFICE SPACE
- S 1.8.7 The Contractor must provide 1 secure office space within the aforementioned work space or within 75 feet of it. The space must have 2 separate desks; one for the TA or delegates, and one for the CA. The office space is for the exclusive use of Government personnel, and must have access to restrooms, be environmentally controlled and able to maintain an internal temperature of 25c throughout the

contract. The space must be available from one week prior to the work commencing to two weeks after vessel acceptance.

S 1.8.8 Each desk must include a minimum of 2 chairs; and have a minimum of 2 electrical plugin sockets per desk. Each desk must have a stand-alone hard-wired internet access of 10 mb/sec minimum speed.

S 1.8.9 Contractor must provide 2 reserved parking spots adjacent to offices specified. Parking spaces are for the exclusive use of Government Personnel. The two spots must be marked "Reserved Canada"

S 1.8.10 Contractor must provide an on-site garbage container for Canada to access in order to dispose of up one 25 liter garbage bags per week from project facilities.

S 1.8.11 The Contractor must arrange cleaning of the office space every second week.

S 1.9 SECURITY

S 1.9.1 The Contractor must provide security for the vessel during quiet hours at the contractor facility. The Contractor's facilities and office space must be locked in the evenings and fitted with both a security and fire alarm system.

S 1.10 CONTRACTOR COMPETENCY

Detailed in the Contract.

CCGS Vakta
Refit 2018

Specification No: F1782-18C938

11.0 HULL AND RELATED STRUCTURES

Prepared by:
Marine Engineering Western Region
P.O. Box 6000
9860 W. Saanich Rd.
Victoria BC
V8L 4B2

11.1 TRANSPORTING VESSEL

11.1.A Scope

- A.1** The vessel must be transported to the Contractor's facility from the Gimli Coast Guard Base. On completion of all work within the specification and any work arising the vessel must be transported back to the Gimli Coast Guard Base.

11.1.B References

B.1 Equipment Data – Not Used

B.2 Drawings

Drawing Number	Description
	Docking Plan

B.3 Regulations

FSM Procedures	Title	Included Yes/No
Publications		
Standards		
Regulations		

11.1.C Statement of Work

- C.1** The Contractor must complete a tank condition report (soundings). The report must be signed by the TI/TA and the Contractor.
- C.2** The Contractor or their subcontractor must have moved a minimum of a 70,000 lb load, of over 15 feet tall over 40 kilometers on land within the last 3 years.
- C.3** The Contractor must provide Canada with an Engineers stamped approval on their transportation plan prior to moving of the vessel. This plan must cover the move from the CG base to the Contractors facility and then back to the CG base at the conclusion of the work.
- C.4** The Contractor must transport the CCGS Vakta from the parking lot at the Coast Guard Station located at 95 First Avenue Gimli Mb R0C 1B0 to their facility.
- C.5** The Vakta will be left on keel blocks and bilge supports as per docking plan for the Contractor. The vessels mast will be lowered by Canada. The vessel will be power washed by Canada prior to the start of the work period.
- C.6** The vessel must be transport in one piece. The wheel house must remain attached to the vessel during the move.
- C.7** The Contractor will be responsible for the safe and lawful move of the CCGS Vakta to their facility.
- C.8** The Contractor must support the vessel inside their repair facility as per the docking plan.
- C.9** The Contractor upon completion of specified work must move the CCGS Vakta back to the Coast Guard Station in Gimli Mb in a safe and lawful manner.
- C.10** The Contractor must pay all cost associated within this specification including but not limited to specialized equipment, permit fees, engineering costs, insurance and cost associated with mitigating interference items such as overhead wires and other impediments.

11.1.D Proof of Performance

D.1 Inspections

D.1.1 Testing must be witnessed by the TA.

D.1.2 Testing/Trials – Not Used

D.2 Certification

D.1.2 The Contractor must provide Canada with an Engineers stamped approval on their transportation plan prior to moving of the vessel. This plan must cover the move from the CG base to the Contractors facility and then back to the CG base at the conclusion of the work.

D.1.3 The Contractor must provide Canada with copies of all regulatory permits

11.2 REGULATORY ORGANIZATION

11.2.A Scope

- A.1** The Canadian Coast Guard will advise the Contractor which regulatory body they will be required to contact to arrange for inspections. Canada will pay directly for the costs of inspection but the Contractor must arranged the inspections. The Regulatory Organization may be Transport Canada or the American Bureau of Shipping. Canada will advise Contractor at the viewing.

11.2.B References

B.1 Equipment Data – Not Used

B.2 Drawings

Drawing Number	Description
	Docking Plan

B.3 Regulations

FSM Procedures	Title	Included Yes/No
Publications		
Standards		
Regulations		

11.2.C Statement of Work

- C.1** The Contractor must allow the RO access to the vessel and the contractor's facility for the purpose of inspections as outline within this specification.
- C.2** Canada will pay the RO directly for all regulatory costs.
- C.3** The Contractor must engage with the TA a minimum 3 weeks prior to the work period in order to set up a schedule for the RO.
- C.4** The Contractor must provide the RO a regulatory inspection time line 2 weeks before the start of the work period in Gantt format.
- C.5** The Contractor must update the RO with any changes to inspection date and times 2 weeks prior to the arranged date and time.

11.2.D Proof of Performance

- D.1 Inspections**
- D.2 Certification**

11.3 UNDERWATER HULL INSPECTION (REGULATORY INSPECTION)

A.1 The Contractor must engage the RO (Regulatory Organization) after the vessel hull has been sand blasted for a hull inspection.

11.3.B References

B.1 Equipment Data – Not used

B.2 Drawings & Documents – Not used

B.3 Regulations and Standards

B.3.1 The following Standards and Regulations apply to work carried out in this section; The Contractor must ensure all work completed in this section meets these Standards and Regulations as well as any other pertinent Federal/Territorial Regulation or Standard:

FSM Procedures	Title	Included Yes/No
Publications		
Standards	Interspec Paint Specification	Yes
Regulations		

11.3.C Statement of Work for UnderWater Hull Inspection

- C.1** Upon completion of sandblasting specified in 11.6 the Contractor must arrange for a RO presence to inspect the underwater hull.
- C.2** The contractor must mark every vertical frame in chalk on the hull for reference.

11.3.D Proof of Performance

D.1 Inspection Points

D.2 Testing/Trials – Not Used

D.3 Certification – Not Used

D.4 Documentation

- D.4.1 Transport Canada and or the RO will update the Div 3 report.

D.5 Training – Not Used

11.4 FUEL TANK INSPECTION (REGULATORY INSPECTION)

A.1 The Contractor must arrange the Regulatory Organization inspection the new fuel tank arrangement.

11.4.B References

B.1 Equipment Data – Not used

B.2 Drawings & Documents – Not used

B.3 Regulations and Standards

B.3.1 The following Standards and Regulations apply to work carried out in this section; The Contractor must ensure all work completed in this section meets these Standards and Regulations as well as any other pertinent Federal/Territorial Regulation or Standard:

FSM Procedures	Title	Included Yes/No
Publications		
Standards		
Regulations		

11.4.C Statement of Fuel Tank Inspection

- C.1** The Contractor must remove and dispose of up to 1000 litres of fuel oil.
- C.2** The Contractor must clean the fuel tanks to SSPC1 prior to inspection.
- C.3** The tanks must be tested and deemed safe for entry as per confined space regulations.
- C.4** The Contractor must arrange the RO in for an inspection after work specified in Appendix A Endurance Betterment.
- C.5** Upon successful completion of testing the tank must be not closed up with until a final inspection by the TI/TA.
- C.6** The tanks are to be closed up with new CFM **Viton** gaskets.

11.4.D Proof of Performance

D.1 Inspection Points

D.2 Testing/Trials

- D.2.1 As per Appendix A

D.3 Certification

- D.3.1 As per Appendix A

D.4 Documentation

- D.4.1 As per Appendix A

D.5 Training – Not Used

11.5 INSPECTION OF STORM VALVES AND SEA CONNECTIONS **(REGULATORY INSPECTION)**

11.5.A Identification

- A.1** The vessel's 3 listed storm valves and 10 listed sea connections are to be inspected by the RO.

11.5.B References

B.1 Equipment Data

Storm Valves

Location and Frame #	Valve Type	Size
Crew Cabin 13-14	SDNR Threaded	1-1/2"
Tank Space 10-11	SDNR Threaded	1-1/2"
Engine Room 2-3	SDNR Threaded	1-1/2"

Sea Connections

Location	Valve Type	Size
Port Sea Chest	Butterfly Flanged	6"
Port Sea Chest	Gate Flanged	1-1/2"
Port Sea Chest	Gate Flanged	2"
Stbd Sea Chest	Butterfly Flanged	6"
Stbd Sea Chest ER	Gate Flanged	1-1/2"
Stbd Sea Chest ER	Gate Flanged	2"
Sea Chest Tank Space	Ball Threaded	1"
Sea Chest Tank Space	Ball Threaded	1"
Sea Chest Tank Space	Ball Threaded	1"
Sea Chest Tank Space	Ball Threaded	3/4"

B.2 Drawings & Documents

- B.2.1 All Drawings are listed in the General Notes. The following Drawings are to be considered as Guidance Drawings as defined in the Drawings section of the General Notes.

Drawing Number	DRAWING TITLE

B.3 Regulations and Standards

- B.3.1 As indicated in the Interspec document.

11.5.C Statement of Work

- C.1** The Contractor must disassemble, open and lay out for inspection the 3 storm valves and ten sea connection valves listed in the equipment sections of this specification and afford the TA an opportunity inspect. Photographs of all valves must be taken by the Contractor prior to any repair work and placed into the Contractor QA documentation. Any required repairs will be thru PSPC 1379 action.
- C.2** The Contractor once any repairs have been completed the Contractor must lay out the valves for an inspection from the RO. Any further repairs required will be subject to PSPC 1379 action.
- C.3** The Contractor must reinstall all removed valves in the same orientation and location with CFM new gaskets, seals and or packing.

11.5.D Proof of Performance

D.1 Inspection Points

- D.1.1 The Contractor must disassemble, open up and lay out all valves for inspection for the RO and not install until inspected.

D.2 Testing/Trials – Not Used

- D.2.1 A leak test in the presence of the TA using a column of water of a minimum of 5 feet for a period of not less than 2 hours must be completed by the contractor to ensure proper seals of all valves listed.
- D.2.2 Upon completion of D.2.1 the Contractor must demonstrate to the TA the operation of all valves.

D.3 Certification - Not Used

D.4 Documentation –

- D.4.1 The Contractor must furnish a condition report of the valves as per their QA documentation.

D.5 Training – Not Used

11.6 CATHODIC PROTECTION

A.1 The Contractor must inspect all fitted magnesium anodes

11.6.B References

B.1 Equipment Data

B.2 Drawings & Documents – Not used

B.3 Regulations and Standards

B.3.1 The following Standards and Regulations apply to work carried out in this section;
The Contractor must ensure all work completed in this section meets these Standards
and Regulations as well as any other pertinent Federal/Territorial Regulation or
Standard:

FSM Procedures	Title	Included Yes/No
Publications		
Standards	Interspec Paint Specification	Yes
Regulations		

11.6.C Statement of Work for Hull Zinc Anodes

- C.1** All external hull, shaft and rudder anodes must be inspected by the Contractor and TI/TA.
- C.2** The Contractor must unbolt all anodes prior to sandblasting and insert a bolt into the hole to protect the threads. The TI/TA will advise which anodes if any require replacement.
- C.3** Any anodes requiring replacement will be thru PSPC 1379 action.
- C.4** The Contractor must bolt on the anodes upon completion of coatings.
- C.5** The Contractor must provide a report with the anode conditions as per the document sections of this specification.

11.6.D Proof of Performance

D.1 Inspection Points

- D.1.1** The contractor must inspect the anodes with the TA prior to removal of anodes to determine which anodes can be reused.

D.2 Testing/Trials – Not Used

D.3 Certification – Not Used

D.4 Documentation

- D.4.1** The Contractor's final report must include details of the anodes replaced, quantity, and location.

D.5 Training – Not Used

11.7 PAINTING REQUIREMENTS

11.7.A Identification

- A.1** The Canadian Coast Guard will be contracting International Paint contact - Mr. Keegan Gemmil, Account Executive, International Paint, cell 604 315 4347, Keegan.Gemmill@akzonobel.com directly as its technical inspector for all coating system work. International Paint will be given full authority by The Canadian Coast Guard to perform technical inspections. The contractor must present International Paint a coating time line and update International Paint of any changes.
- A.2** Keegan Gemmill may designate another NACE Level 3 inspector within International Paint to act as technical inspector if agreed to by the TA
- A.3** The vessel must be sandblasted with new aluminum oxide as detail within this specification and the Interspec.

11.7.B References

B.1 Equipment Data

- B.1.1 Canadian Coast Guard will furnish the contractor with a coating plan.

B.2 Reports

- B.2.1 A full paint specification is included named Interspec

B.3 Regulations and Standards

- B.1.2 Not Used

B.4 Technical Documents

- B.4.1 The following Technical Documents apply to work carried out in this section; The Contractor must ensure all work completed in this section meets these Technical Documents as well as any other pertinent Federal/Territorial Regulation or Standard:

Number	Title	Included Yes/No
	International Paint InterSpec	Yes

11.7.C Statement of Work

- C.1** The Contractor must allow International Paint full access to the vessel during planned coating or preparatory times.
- C.2** The Contractor must provide International Paint a complete coating time line two weeks prior to the start of the work period and inform them of any changes.
- C.3** The Contractor must contact International paint 48 hours prior to any coating activities.
- C.4** The Paint Inspectors fee/cost will be assumed by Canada
- C.5** The vessel must be inside the contractor facility for all coating work.
- C.6** **The vessel must be sandblasted to SP-6 with new Aluminum Oxide only no substitute.**
- C.7** No sandblasting operations must be performed when there is a risk of mechanical, pneumatic or electrical components becoming contaminated by the ingress of abrasive materials. For this reason, the contractor must ensure that all sandblasting work is completed before machinery disassembly. When this is not possible, the contractor must take the appropriate measures to ensure that all vulnerable machinery items are protected in an efficient and effective manner. All crane wires must be completely wrapped to prevent entry of grit. The Contractor must supply and install all coverings.
- C.8** The vessel's interior must be completely sealed off with all vents, window, hatches and doors closed and tapped over with poly or plastic during blasting and until after clean up.
- C.9** The vessel's interior must be positively pressurized with the fan and its suction placed farther than 30 feet from the contractor's facility and is located up wind. The fan must be run 10 minutes prior and 30 minutes post any blasting.
- C.10** The propeller, shaft, stern tube, rudder bearings, sounders, transducers, and all other fittings must be properly protected during all refit operations to avoid damage from sandblasting or any other cause. The shafts and rudders may be removed prior to sand blasting and moved to a location away from sandblast damage. The shaft seals, shaft bearing, penetration into engine space thru stern tube, rudders and rudder bearings must be protected.
- C.11** The vessels windows can be easily damaged. The Contractor must protect them from mechanical damage

- C.12** All electronics or lights on the bridge top, open wheel house and mast must be protected from mechanical damage.
- C.13** Prior to blasting the TI/TA must inspect all hull and superstructure penetrations and positive pressure fan arrangement.

11.7.D Proof of Performance

D.1 Inspections

- D.1.1 The Contractor must follow the quality control requirements identified in the Paint Specification and Product Data Sheets

D.2 Testing/Trials – Not Used

D.3 Certification -

- D.3.1 Not Used

D.4 Documentation (Reports/Drawings/Manuals)

- D.4.1 The Canadian Coast Guard has directly contracted with International Paint and International paint will be forwarding the Canadian Coast Guard a report and underwater coating certificates.

D.5 Training – Not Used

11.8 PAINTING OF SHIPS HULL BELOW WATERLINE

11.8.A Identification

NOTE: This specification provides the requirement of areas to be prepared and treated. The Interspec technical specification provides the technical requirement for method and standard of preparation, product type, number and thickness of coatings, etc.

A.1 The vessel's hull below water line must sand blasted.

A.2 The vessel must receive the coating system as per the attached Interspec.

11.8.B References

B.1 Equipment Data

Standards	Interspec Paint Specification	Yes
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B.2 Drawings & Documents

Drawing Number	Description

B.3 Regulations and Standards

B.3.1 As indicated in the Interspec document.

11.8.C Statement of Work

- C.1** The Contractor must sandblast to SP-6 and coat the underwater hull section as per the Inspec. The underwater hull area is 910 sq. ft
- C.2** The underwater hull surface includes the hull, rudder, swim grid and trim tabs.
- C.3** Disposal of all sand grit and paint chips are to be the responsibility of the contractor. The contractor is to provide certificate of disposal as part of their QA documents.

11.8.D Proof of Performance

D.1 Inspections

- D.1.1 The Contractor must follow the quality control requirements identified in the Paint Specification and Product Data Sheets, including the hold points.
- D.1.2 The Contract must inform the TA 48 hours before an inspection is ready.
- D.1.3 The hull is to be surveyed by the TA prior to sandblasting
- D.1.4 The hull is to be surveyed by the TA and RO after sandblasting and prior to coating

D.2 Testing/Trials – Not Used

D.3 Certification

- D.3.1 The Contractor must supply Canada a disposal certificate for the sandblast grit.
- D.3.2 Not Used

D.4 Documentation (Reports/Drawings/Manuals)

- D.4.1 The Canadian Coast Guard has directly contracted with International Paint and International paint will be forwarding the Canadian Coast Guard a report and underwater coating certificates.

D.5 Training – Not Used

11.9 PAINTING OF HULL ABOVE WATERLINE

11.9.A Identification

NOTE: This specification provides the requirement of areas to be prepared and treated. The Interspec technical specification provides the technical requirement for method and standard of preparation, product type, number and thickness of coatings, etc.

A.1 The vessel's hull is to be sandblasted and painted above the water line.

A.2 The vessel must receive the coating system as per the attached Interspec.

11.9.B References

B.1 Equipment Data

Standards	Interspec Paint Specification	Yes
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B.2 Drawings & Documents

B.2.1 All Drawings are listed in the General Notes. The following Drawings are to be considered as Guidance Drawings as defined in the Drawings section of the General Notes.

Drawing Number	DRAWING TITLE

B.3

Regulations and Standards

B.3.1 As indicated in the Interspec document.

11.9.C Statement of Work

- C.1** The Contractor must sandblast to SP-6 and coat the underwater hull section as per the Inspec. The underwater hull area is 250 sq. ft.
- C.2** Disposal of all sand grit and paint chips are to be the responsibility of the contractor. The contractor is to provide certificate of disposal as part of their QA documents.
- C.3** The hull marking “Vakta” on the stern must be painted in two coats of white.
- C.4** All decals must be removed and new CFM decals of equal size and same font must be fitted after coating.
- C.5** The identifying stripe must be given two coats of white paint as specified in the Interspec.
- C.6** The identifying stripe border must be given two coats black paint as specified in the Interspec specification.

11.9.D Proof of Performance

D.1 Inspection Points

- D.1.1 The Contractor must follow the quality control requirements identified in the Paint Specification, including the hold points.

D.2 Testing/Trials – Not Used

D.3 Certification - Not Used

D.4 Documentation –

- D.4.1 The Canadian Coast Guard has directly contracted with International Paint and International paint will be forwarding the Canadian Coast Guard a report.

D.5 Training – Not Used

11.10 PAINTING OF MAIN DECK

11.10.A Identification

NOTE: This specification provides the requirement of areas to be prepared and treated. The Interspec technical specification provides the technical requirement for method and standard of preparation, product type, number and thickness of coatings, etc.

A.1 The vessel's main deck is to **be spot repaired**

A.2 The vessel must receive the coating system as per the attached Interspec.

11.10.B References

B.1 Equipment Data

Standards	Interspec Paint Specification	Yes
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B.2 Drawings & Documents

B.2.1 All Drawings are listed in the General Notes. The following Drawings are to be considered as Guidance Drawings as defined in the Drawings section of the General Notes.

Drawing Number	DRAWING TITLE

B.3

Regulations and Standards

B.3.1 As indicated in the Interspec document.

11.10.C Statement of Work

- C.1** The Contractor must **spot repair** to SP-6 and coat the main deck section as per the Inspec.
- C.2** The Contractor is to bid on 4 areas of .5 square meters of spot repair.
- C.3** The Contractor is to power wash and apply one over all top coat as per Inerspec. The Contractor is to bid on 500 square feet.
- C.4** The main deck includes all areas of the main deck including the rescue area on the Port and Stbd sides.
- C.5** Disposal of all sand grit and paint chips are to be the responsibility of the contractor. The contractor is to provide certificate of disposal as part of their QA documents.
- C.6** The fairleads or bollards two coats black paint as specified in the Interspec specification.

11.10.D Proof of Performance

D.1 Inspection Points

- D.1.1 The Contractor must follow the quality control requirements identified in the Paint Specification, including the hold points.

D.2 Testing/Trials – Not Used

D.3 Certification - Not Used

D.4 Documentation –

- D.4.1 The Canadian Coast Guard has directly contracted with International Paint and International paint will be forwarding the Canadian Coast Guard a report.

D.5 Training – Not Used

11.11 VAKTA ENDURANCE BETTERMENT

11.11.A Identification

A.1 The Vakta requires greater endurance to complete mission critical work.

11.11.B Drawings

B.1.1 All Drawings are listed in 4. Appendix B Endurance Betterment Drawings.

B.1 Regulations and Standards

B.1.2 All Regulations and Standards are listed in Appendix B Endurance Betterment

11.11.C Statement of Work

C.1 The Contractor must perform the work as set out in 3. Appendix A Endurance Betterment Specification.

11.11.D Proof of Performance

D.1 Inspection points

D.1.1 The Contractor must afford the TA the opportunity to verify that the work is completed as detailed in 3. Appendix A.

11.11.E Testing/Trials

E.1.1 The Contractor must afford the TA the opportunity to verify that the work is completed as detailed in 3. Appendix A.

11.11.F Certification

F.1.1 All components must be type approved with type approval certificates provided to the TA in accordance with the Documentation section of the General Notes.

11.11.G Documentation

G.1.1 The Contractor must supply the following drawings in accordance with the Drawings section of the General Notes.

CCGS Vakta
Refit 2018

Specification No: F1782-18C938

12.0 PROPULSION AND MANEUVERING

Prepared by:
Marine Engineering Western Region
P.O. Box 6000
9860 W. Saanich Rd.
Victoria BC
V8L 4B2

12.1 TAIL SHAFT INSPECTION (REGULATORY INSPECTION)

12.1.A Identification

A.1 The contractor must remove both tail shafts for regulatory inspection.

12.1.B References

B.1 Equipment Data - Not Used

B.2 Drawings – Not Used

Drawing Number	DRAWING TITLE	Number of Sheets

B.3 Regulations and Standards

B.3.1 The following Standards and Regulations apply to work carried out in this section; The Contractor must ensure all work completed in this section meets these Standards and Regulations as well as any other pertinent Federal/Territorial Regulation or Standard:

FSM Procedures	Title	Included Yes/No
Publications		
Standards		
Regulations		

12.1.C Statement of Work

- C.1** The Contractor must remove both propellers from the vessel. The propellers are to be visually inspected any remedial work required will be thru PSPC 1379 action.
- C.2** The Contractor must remove and inspect the fitted line cutters on each shaft. Any remedial work required will be thru PSPC 1379 action.
- C.3** The Contractor must measure bearing clearances prior to uncoupling of the shaft.
- C.4** The Contractor must remove both tail shafts from the vessel, clean with a scotch-brite pad and place on roller blocks for examination by the Regulatory Organization and TI/TA. Additional repairs required to the shafts will be thru PSPC 1379 action.
- C.5** The Contractor must apply dye penetrant on the shaft key ways to check for cracks. Any repairs required will be thru PWGSC 1379 action.
- C.6** The Contractor is to inspect the bonding shaft brushes with the TI/TA Additional repairs required to the shaft brushes will be thru PSPC 1379 action
- C.7** The Contractor must inspect both PSS 2 ½” shaft seals with the TI/TA. Additional repairs required to the shaft seals will be thru PSPC 1379 action.

Both propellers must be blued and fitted to the shafts to 70 % contact and inspected by the TA and RO. Additional machining or bluing labor above 8 hrs if required will be thru PSPC 1379 action. Contractor to quote 8 hrs for both propeller fits and blueing.

- C.8** Upon inspection the Contractor must reinstall the shafts, line cutters, shaft brushes and propellers. Final torque of coupling and propellers must be done with in the presence of the TI/TA. The final setting of the preload for the shaft seals must be done in the presence of the TI/TA.

12.1.D Proof of Performance

D.1 Inspection Points

- D.1.1** The Contractor must arrange for the Regulatory Organization to attend.
- D.1.2** The Contractor must notify the TI/TA 48 hours prior to when the shaft is to be withdrawn and reinstalled.

D.2 Testing/Trials

D.3 Certification – Not Used

- D.3.1** Certificates in accordance with the Documentation section of the General Notes.

D.4 Documentation

D.4.1 The Contractor must provide shaft clearances as part of their QA documentation.

D.4.2 The Contractor must provide photos of the prop fitting as part of the QA documentations.

D.5 Training – Not Used

12.2 RUDDER REMOVAL (REGUALTORY INSPECTION)

12.2.A Identification

A.1 The two rudders require removal and inspection from the RO.

12.2.B References

B.1 **Equipment Data** - Not Used

B.2 **Drawings** – Not Used

Drawing Number	DRAWING TITLE	Number of Sheets

B.3 Regulations and Standards

B.3.1 The following Standards and Regulations apply to work carried out in this section; The Contractor must ensure all work completed in this section meets these Standards and Regulations as well as any other pertinent Federal/Territorial Regulation or Standard:

FSM Procedures	Title	Included Yes/No
Publications		
Standards		
Regulations		

12.2.C Statement of Work

- C.1** The Contractor must remove both rudders and clean the rudder shafts with a Scotch-Brite pad.
- C.2** The Contractor must take bearing clearances
- C.3** The Contractor must lay out the rudders for an inspection by the TA and RO.
- C.4** The Contractor must visually inspect the rudder for cracks or damage with the TA and RO.
- C.5** The Contractor with TI/TA and RO will inspect all bearing shaft surfaces.
- C.6** The Contractor will remove old packing and replace with 3 rings of Tallow packing. The Contractor will cut 2 spare rings and secure them in zip lock bags in the steering flats.
- C.7** The Contractor must reinstall the two rudders.
- C.8** Any repairs required will be thru PSPC 1379 action.

12.2.D Proof of Performance

D.1 Inspection Points

D.2 Testing/Trials

D.3 Certification – Not Used

- D.3.1 Certificates in accordance with the Documentation section of the General Notes.

D.4 Documentation

- D.4.1 Measurement and clearance and a condition report must be in the QA documentation

CCGS Vakta
Refit 2018

Specification No: F1782-18C938

13.0 ELECTRICAL DISTRIBUTION SYSTEMS

Prepared by:
Marine Engineering Western Region
P.O. Box 6000
9860 W. Saanich Rd.
Victoria BC
V8L 4B2

13.1 ANNUAL MEGGER SURVEY

13.1.A Identification

- A.1.1 The contractor must perform the annual Megger survey on the vessel using the template Megger Survey Vakta.

13.1.B References

B.1 Equipment Data

B.2 Drawings – Not Used

B.3 Regulations and Standards

- B.3.1 The following Standards and Regulations apply to work carried out in this section; The Contractor must ensure all work completed in this section meets these Standards and Regulations as well as any other pertinent Federal/Territorial Regulation or Standard:

FSSM Procedures	Title	Included Yes/No
Publications		
TP 127	Ships Electrical Standards	No
IEEE 45	Recommended practice for Electrical Installations on Shipboard	No
Standards		
Regulations		
	Canada Shipping Act 2001	No

13.1.C Statement of Work

- C.1** The Contractor must ensure with the TA that all sensitive electronic equipment is disconnected prior to conducting the Meggar Test.
- C.2** The contractor must conduct the annual Megger survey on all circuits greater than 55 volts in accordance with TP127e on the vessel using the attached template.
- C.3** Any deficiencies found during the survey will be actioned by PSPC 1379.

13.1.D Proof of Performance

D.1 Inspection Points

- D.1.1 The contractor is to allow the TA to inspect any deficiencies found.

D.2 Testing/Trials – Not Used

D.3 Certification

- D.3.1 Not used.

D.4 Documentation

- D.4.1 The contractor must include a report which includes results after any repairs have been actioned.

D.5 Training – Not Used