

VESSEL CCGS ÎLE SAINT-OURS

F3004 – 18IN392

Winter 2019

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G 1.0 GENERAL COMMENTS

G 1.1 Information about the vessel

G 1.1.1 Details

Name:	CCGS Île Saint-Ours
Official number:	806305
Category:	Special Navais Vessel
Year built:	1985
Main dimensions:	23 m
Length:	23 m
Breadth (moulded):	6 m
Draft at full load:	1.6
Tonnage (displacement):	92 t
Propulsion	Diesel reduction

G 1.1.2 Equipment

Equipment	Brand	Device model	Serial no.
10,000 kg deck crane	Hiab	Sea Crane 180	SB 1660
454 kg davit	N/A	Davit arm style	N/A
Boat	RIBO	450	

G 1.2 **References****G 1.2.1** **Regulations**

G 1.2.1.1 The latest version, in force at the time of signing the contract, of the laws, regulations, standards, publications and procedures mentioned below, must be used for reference. The Contractor shall ensure that all work performed in the specifications is performed in accordance with all federal and territorial standards and regulations. CCG procedures must be used as a guide if no other regulations take precedence.

Fleet Safety and Security Manual (FSSM) procedures	Title	Included – Yes/No
FSSM	Fleet Safety and Security Manual (latest edition)	yes
Specific to the vessel	Specific to the vessel: Asbestos risk appraisal report and management plan	yes
Specific to the vessel	Specific to the vessel: Lead paint test report	yes
Publications		no
TP 127	Ships Electrical Standards	no
NFPA 306 2014	Standard for the Control of Gas Hazards in Vessels	no
TP 3669	Standards for Navigating Appliances and Equipment	no
TP 11469	Guide to Structural Fire Protection	no
TP 14231	Marine Occupational Safety and Health Program (Ships)	no
TP 14612	Procedures for Approval of Life-Saving Appliances and Fire Safety Systems, Equipment and Products	no
TP 4414 E	Guidelines Respecting Helicopter Facilities on Ships	no
IEEE 45	Institute of Electrical and Electronic Engineers, Recommended Practice for Electrical Installations on Shipboard	no
70-000-000-EU-JA-001	Specification for the Installation of Shipboard Electronic Equipment	no
IEC 60533	Electrical and electronic installations in ships – Electromagnetic compatibility	no
IEC 60945	Maritime navigation and radiocommunication equipment and systems – Methods of testing and required test results	no
Publication continued	Title	Included – Yes/No

EPS Report 1/RA/2	Environmental Code of Practice for the Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems (Environment Canada)	no
NFPA 10	Standard for Portable Fire Extinguishers	no
18-080-000-SG-003 (formerly DFO/5884 - TP 12445E)	PAINT AND COATINGS STANDARD	no
Standards	Title	Included – Yes/No
CCG	CCG CAD Using AutoCAD http://intra.coast-guard.ca/folios/00922/docs/ccgstden.zip	no
CCG	CCG Electronic Data Management Standard	no
CCG	Production of CCG trim and stability booklet MECTS No. 3350860	no
CCG	Colour Coding Standard for Piping Systems 30-000-000-ES-TE-001	no
CSA W47.1	Certification of Companies for Fusion Welding of Steel, Section 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 on Non-destructive Testing	no
CT-043-EQ-EG-001-E	Welding Specification http://intra.coast-guard.ca/folios/00922/docs/WeldingSpecification-eng.pdf	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
ASME Y14.100	<i>American Society of Mechanical Engineers Y14.100 – 2017 Engineering Drawing Practices – Nov. 14 2017</i>	no
Regulations	Title	Included – Yes/No
MOHSR	<i>Maritime Occupational Health and Safety Regulations</i>	no
CSA	<i>Canada Shipping Act</i>	no
Fire safety regulations	<i>Marine Machinery Regulations (SOR/90-264)</i>	no
Fire safety regulations	<i>Vessel Fire Safety Regulations (SOR/2017-14)</i>	no
Hull regulations	Hull Inspection Regulations (C.R.C., c. 1432)	no
Regulations continued	Title	Included – Yes/No
<i>Canada Labour Code</i>	<i>Canada Labour Code (R.S.C. [1985] c. L-2)</i>	no

Workplace Safety and Workers' Compensation Commission – Workplace safety regulations for the province or territory in which the work is performed	https://www.ccohs.ca/oshanswers/information/wcb_canada.html	no
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G 1.2.2 Reference drawings

G 1.2.2.1 The following drawings are to be considered as reference drawings, as defined in the Drawings section of the General Remarks.

Drawing no.	DRAWING TITLE	Number of sheets
42-83-310	Insulation plan	
42-83-405	Deck crane arrgt	
	Hydraulic plan	
42-83-803	Ventilation AC layout	
	List of electrical circuits on the <i>Saint-Ours</i>	
	M12 service manual	
	CCGS <i>Île Saint-Ours</i> – Portable fire extinguishers	
QCL-5-21214	CO ₂ syst installation	
	Perkins 4-236 manual	
	Detroit Diesel 8V92 manual	
	Pay & Brinck A/S, PB130 transmission manual	

G 1.2.3 Tanks

G 1.2.3.1 No work is planned on any of the tanks.

G 1.2.3.2 Abbreviations make amendments or deletions as needed; add new abbreviations to the Standard Clauses of the General Remarks.

ACM : Asbestos Containing Material	MCA : Matériaux contenant de l'amiante
CFM : Contractor Furnished Material and/or Equipment	MFE : Matériel fourni par l'entrepreneur
CLC : Canada Labour Code	CCT : Code canadien du travail

CSA – Association canadienne de normalisation	CSA : Association canadienne de normalisation (ACNOR)
CWB : Canadian Welding Bureau	BCS : Bureau canadien du soudage
DFO/CCG : Department of Fisheries and Oceans, Canadian Coast Guard	MPO/GCC : Pêches et Océans Canada, Garde côtière canadienne
FSR : Manufacturer's Field Service Representative	RD : Représentant détaché (du fabricant)
FSSM : Fleet Safety and Security Manual	MSSF : Manuel de sécurité et de sûreté de la flotte
GSM : Government Supplied Material and/or Equipment	MFG : Matériel fourni par le gouvernement
HC : Health Canada	SC : Santé Canada
IEEE : The Institute of Electrical & Electronic Engineers Inc.	IEEE : Institut des ingénieurs électriciens et électroniciens
MSDS : Material Safety Data Sheet	FS : Fiche signalétique
NDT : Non Destructive Testing	END : Essais non destructifs
OEM : Original Equipment Manufacturer	FEO : Fabricant d'équipement d'origine
OHS : Occupational Health and Safety	SST : Santé et sécurité au travail
PWGSC : Public Works and Government Services Canada	TPSGC : Travaux publics et Services gouvernementaux Canada
RO : Recognized Organization as defined by Canada Shipping Act.	OR : Organisme reconnu au sens de la <i>Loi sur la marine marchande du Canada</i>
SSMS : Safety and Security Management System	SGSS : Système de gestion de la sécurité et de la sûreté
TBS : Treasury Board of Canada Secretariat	SCT : Secrétariat du Conseil du Trésor du Canada
TA : Technical Authority -CCG Superintendent, Marine Engineering Western Region, or her delegated Representative	AT : Autorité technique – Surintendant de la GCC, Ingénierie navale, région de l'Ouest, ou son représentant délégué
TCMS : Transport Canada Marine Safety	SMTC : Sécurité maritime de Transports Canada
TI : Technical Inspector – CCG delegated	IT : Inspecteur technique – Délégué de la GCC
VCS : Vessel Condition Survey	EEN : Examen de l'état d'un navire
VLE : Vessel Life Extension	PVN : Prolongement de vie d'un navire
WCB : Workers' Compensation Board	CNESST : Commission des normes, de l'équité, de la santé et de la sécurité du travail
WHMIS : Workplace Hazardous Materials Information System	SIMDUT : Système d'information sur les matières dangereuses utilisées au travail

G 1.3 Conditions and definitions

G 1.3.1 The following conditions and definitions apply to all work included in the specifications and are intended to describe the quality of implementation and practice that is the minimum acceptable level: N/A

G 1.4 Various provisions

G 1.4.1 Occupational health and safety

G 1.4.1.1 The Contractor and all subcontractors must comply with occupational health and safety (OHS) measures in accordance with relevant federal and provincial

regulations so that the Contractor's activities are conducted safely and without compromising the safety of any staff member.

G 1.4.1.2 When this document refers to the "Safety Management System," this means the Contractor's safety management system, which must be in effect for the entire time that the Contractor has material under its care and custody and must comply with the applicable OHS regulations and procedures.

a) For all work on the Canadian Coast Guard vessel, the Contractor shall meet or exceed the Safety Management System defined in the FSSM, unless the Contractor has proposed a comprehensive safety management system that has been reviewed and accepted by the Technical Authority.

G 1.4.1.3 When the Contractor is working on the vessel while it is under the care and custody of the Canadian Coast Guard, the CCG Safety Management System must be followed:

a) The Contractor and all of its representatives must attend a vessel safety orientation session prior to the commencement of any work to familiarize the Contractor's employees with the vessel's hazards and its work protocol permit systems, as well as with the procedures for safety, risk prevention, hazard response and the safety assessments prior to the work. The Contractor will have access to an uncontrolled copy of the Fleet Safety and Security Manual.

b) The Contractor shall comply with the Fleet Safety and Security Manual (DFO/5737), the instructions for working aboard the vessel, and the relevant requirements of the *Canada Labour Code* during performance of the following types of work:

- i) Work at heights;
- ii) Entry into confined spaces;
- iii) Gas-freeing before entering confined spaces and for hot work;
- iv) Lockout/tagout;
- v) Safety assessments before the work.

c) The Contractor and its representatives must attend a vessel safety orientation session before beginning any work to familiarize the Contractor's employees with the vessel's hazards and its work protocol permit systems. During this session, CCG will review the procedures for safety, risk prevention, hazard response and safety assessment prior to the work. The Contractor will have access to an uncontrolled copy of the Fleet Safety and Security Manual.

d) For lockout/tagout procedures, in addition to the devices provided to the vessel's crew by the Chief Engineer, the Contractor shall provide locks and locking devices to its employees.

e) The Contractor shall comply with the land-based safety procedures and instructions for local facilities.

G 1.4.1.4 The Contractor shall designate a specific person who is responsible for the management of workplace safety. The Security Manager must ensure that daily safety rounds are conducted, safety issues are identified, and safety precautions are maintained.

G 1.4.1.5 Places that present a risk due to work included in the specifications must be secured by the Contractor. The Contractor shall clearly indicate these places by putting up posters to inform and protect all staff, in accordance with the applicable regulations.

G 1.4.2 Lead paints and coatings

G 1.4.2.1 The Contractor shall not use lead paint.

G 1.4.2.2 In the past, lead paint was used to paint CCG vessels. Consequently, some of the Contractor's processes, such as grinding, welding and burning, could release the lead contained in the coatings. The Canadian Coast Guard will provide copies of all available lead analysis results.

G 1.4.3 Damaged paint and retouching

G 1.4.3.1 The Contractor must, at a minimum, repair paint systems that have been altered by the indicated work. Paint systems must match those of the vessel and be applied in accordance with procedures recommended by the paint manufacturer.

G 1.4.3.2 [Enter the applicable clauses indicated in the Standard Clauses section of the General Remarks]

G 1.4.4 Asbestos-containing materials (ACM)

G 1.4.4.1 The Contractor shall use insulation that contains 0% ACM.

G 1.4.4.2 The Contractor will receive, upon request, the most recent asbestos risk assessment report and the CCG Asbestos Management Plan.

G 1.4.4.3 Handling of asbestos-containing materials must be performed by trained personnel or a company certified in asbestos removal, in accordance with federal, provincial/territorial and municipal regulations.

G 1.4.4.4 The Contractor shall provide the TA with certificates of disposal for all asbestos-containing materials removed from the vessel to demonstrate that the disposal has

been performed in accordance with the federal, provincial and municipal regulations in force.

G 1.4.4.5 The Contractor shall provide an “Observation Report” containing concerns or intentions related to asbestos-containing materials that have not previously been specified. Before performing the work, the Contractor shall determine all materials that may contain asbestos. Approved work resulting from the Observation Report must follow the procedures for additional work.

G 1.4.5 Confined spaces

G 1.4.5.1 Access to confined spaces aboard the vessel during the contract period must comply with the Safety Management System determined at the meeting prior to the work. In addition to these requirements, the Contractor shall also perform the following tasks:

- a) Ensure that a qualified person issues a gas-freeing certificate for the spaces to be visited and display the certificate near the entrance to these spaces. The certificates must specify “No danger for persons” or “No danger for hot work,” as applicable.
- b) Provide the TA with a copy of all certificates produced, in accordance with the Documentation section of the General Remarks.

G 1.4.6 Hot work

G 1.4.6.1 All hot work performed under the contract must comply with the Safety Management System. In addition to complying with the requirements of the Safety Management System, the Contractor shall also, at a minimum:

- a) Certify that the confined spaces are “safe for hot work” in accordance with the Confined Spaces section of the General Remarks;
- b) Keep all portable combustible materials at a safe distance of at least two metres;
- c) Provide and install protective materials to prevent the spread of sparks and to protect electrical cables and other services;
- d) Provide and post fire watches in each space where welding, grinding or burning is performed on partitions, ceilings or decks, as well as in the space adjacent to this work;
- e) Provide appropriate fire extinguishers for fire watch members and ensure each member has been trained in the use of fire extinguishers. The fire watch shall monitor the designated location for a minimum of thirty (30) minutes after completion of the hot work. The Contractor shall

record the fire watch monitoring time on all hot work permits, indicating the end time of the hot work and the time the fire watch left its post;

- f) Provide the TA with a copy of the hot work permits issued on site in accordance with the Documentation section of the General Remarks and named according to the task of the specifications generating the required work.

G 1.4.7 Working aloft

G 1.4.7.1 All work done aloft in the masting of the vessel during the maintenance or refit period must comply with the Safety Management System. Notices must be posted to prevent operation of the radar while staff are working at heights on the mast or roof of the bridge.

G 1.4.8 Electrical equipment

G 1.4.8.1 When work is performed on electrical equipment, the Contractor shall lock the equipment in accordance with the Safety Management System and, at minimum, perform the following:

- a) Isolate the main power source and any other source of power to the equipment;
- b) Install locks and warning labels on the main power source and any other power source for switches/disconnectors attached to the equipment being serviced;
- c) Make sure there is no supply voltage to the terminals;
- d) Ensure padlocks and warning labels remain in place until all work is completed.

G 1.4.8.2 The TA must be notified of all work in progress.

G 1.4.8.3 All electrical installations and repairs must be performed in accordance with the latest versions of Transport Canada standard TP127E (Ships Electrical Standards) and IEEE 45 (Recommended Practice for Electric Installations on Shipboard). TP127 takes precedence over the IEEE standard.

G 1.4.9 Workplace Hazardous Materials Information System (WHMIS)

G 1.4.9.1 The Contractor shall provide the Technical Authority with Material Safety Data Sheets (MSDS) for all products that it and its subcontractors provide and that are controlled in accordance with WHMIS. The MSDS must be presented in the formats requested in the Documentation section of the General Remarks.

G 1.4.9.2 All MSDS must be kept up to date in accordance with OHS procedures.

G 1.4.9.3 The TA must allow the Contractor to access the MSDS of all controlled products on board the vessel for all work items specified on the request.

G 1.4.10 Smoking in the workplace

G 1.4.10.1 The Contractor shall ensure compliance with the *Non-smokers' Health Act*. The Contractor shall ensure that no one smokes aboard the vessel, including its employees or subcontractors and the employees of any subcontractor.

G 1.4.11 Material and tools provided by the Contractor

G 1.4.11.1 The Contractor shall ensure that all replacement products, such as seals, gaskets, insulation, small hardware items, oils, lubricants, cleaning solvents, preservatives, paints, liners, coatings, etc., are compliant with the drawings, manuals and instructions of the equipment manufacturer.

G 1.4.11.2 Where no particular item is specified or where a replacement must be made, the Contractor shall provide the TA with an Observation Report indicating the replacement or unspecified items. The Contractor shall give the TA details on the materials used and the grade and quality certificate of various materials before using them.

G 1.4.11.3 The Contractor shall provide all equipment, devices, tools and machinery, such as cranes, scaffolding, trellising and couplings, required to perform the work under these specifications.

G 1.4.11.4 The Contractor shall deliver all new equipment that it must provide to its facilities and store it there. Equipment supplied by the Contractor must be stored in a secure, environmentally-controlled space in accordance with the Equipment Storage section of these specifications.

G 1.4.11.5 All tools must be provided by the Contractor unless otherwise specified in the technical specifications.

G 1.4.12 Material and tools provided by the government

G 1.4.12.1 If the TA provides tools, the Contractor shall return them to the TA in the condition in which they were borrowed. Borrowed tools must be inventoried. The Contractor shall sign the inventory statement upon receipt of the tools and when they are returned to the TA.

G 1.4.12.2 Government furnished equipment that is not specifically mentioned in the technical specifications must be sent to the Contractor and stored in accordance with the Equipment Storage section of these specifications. These activities must be

described in the engineering change or additional work procedures. (PWGSC Form 1379).

G 1.4.13 Storage

G 1.4.13.1 Equipment (i.e., covers, hoods and other elements that may need to be removed and stored) must be stored in accordance with the storage instructions of the equipment manufacturer or supplier. The Contractor shall make these instructions available to the Technical Authority.

G 1.4.13.2 All equipment and items shall be stored so that they are easily accessible for inspection. No item shall be stored directly on the ground.

G 1.4.14 Regulatory verifications and classification surveys

G 1.4.14.1 [N/A]

G 1.4.15 Contractor inspections

G 1.4.15.1 In collaboration with the TA, the Contractor shall coordinate an inspection of the condition and location of items to be removed before performing the indicated work or accessing an area to perform work.

G 1.4.15.2 The Contractor shall take a photo showing the condition of the item before removing it. Each photo must comply with the Documentation section of the General Remarks and be named in accordance with the section of the specifications that resulted in the removal of these items.

G 1.4.15.3 Prior to completing a task under these specifications, the Contractor shall allow the TA to verify that the work has been completed in accordance with the specifications. The Contractor shall therefore have all the photos, documents, reports and test plans that relate to the task that is deemed complete.

G 1.4.16 Records of work in progress

G 1.4.16.1 The TA may record work in progress in various ways, including using photos, videos, digital media and film.

G 1.4.1 Access for maintenance, installation and removal

G 1.4.1.1 [N/A]

G 1.4.2 Assembly of components

- G 1.4.2.1 The Contractor shall ensure that, during the installation of the specified equipment, the parts and equipment assembled are cleaned to remove stains, weld spatter or excess solder, filler metal, metal flakes or other foreign material that could interfere with the normal operation, function or appearance of the equipment. This includes any particles that could dislodge or move during the expected normal service life of the equipment. All corrosive materials must be eliminated. This cleaning must take place before assembly of the equipment parts.
- G 1.4.2.2 The Contractor shall replace damaged covers, hoods and components with new covers, hoods or components.
- G 1.4.2.3 If the manufacturer does not provide the necessary information, the bolt and nut tightening torques specified in the SAE, ANSI or BS 1083 standards must be used.
- G 1.4.3 Equipment protection**
- G 1.4.3.1 The Contractor shall take measures to ensure that the surfaces and components of equipment installed aboard the vessel are protected from damage, soiling and contaminants produced by the work.
- G 1.4.3.2 Throughout the work under the contract, all electrical and electronic equipment and components must be protected against physical and internal damage and the effects of temperature or other adverse environmental conditions.
- G 1.4.3.3 The Contractor shall protect equipment that may be damaged due to the movement of materials and equipment in the vicinity. The Contractor shall also protect the equipment from nearby sources of contamination including, but not limited to, burning, welding, spraying abrasives (sandblasting), grinding and painting .
- G 1.4.3.4 All surfaces and all equipment, furniture or decorations damaged before acceptance must be returned to their condition before the Contractor's work.
- G 1.4.3.5 All openings of machines or systems must be equipped with full, well-fitting, solidly attached covers or plugs at all times while awaiting connections.
- G 1.4.3.6 The Contractor shall obtain and follow the instructions of its subcontractors regarding the special protective measures required for the equipment they provide during the work. These instructions shall be transmitted to the TA.
- G 1.4.3.7 Protective devices including, but not limited to, plastic sheeting, flame retardant covers, heavy-duty cloths, wood stoppers, wooden enclosures and heating devices shall be used as needed.

G 1.4.3.8 The Contractor shall protect the vessel against the risk of infestation by vermin (insects, mammals and birds). If an infestation occurs during the contract period, the Contractor shall bear the costs for extermination of the vermin prior to the vessel's departure and the end of the contract.

G 1.4.4 Systems containing halocarbons

G 1.4.4.1 All work on systems containing halocarbons must comply with the *Federal Halocarbon Regulations*, 2003 (SOR/2003-289). These regulations can be consulted at the following Internet address: <http://laws-lois.justice.gc.ca/eng/regulations/SOR-2003-289/page-1.html>

G 1.4.5 Welding

G 1.4.5.1 In addition to section 7.16 Certification for Welding Standards – Contract, all welding and weld inspection work must be conducted in accordance with CCG's CT-043-eq-eg-001 Welding Specification. This document will be delivered to the Contractor within 48 hours of a written request to the TA.

G 1.4.5.2 The standards governing welding of material less than 3 mm thick must meet the requirements of CCG's CT-043-eq-eg-001 Welding Specification. For materials over 3 mm thick, the Contractor shall comply with the following requirements:

- a) For structural steel over 3 mm thick, welding must meet the requirements of CSA W47.1 and W59, except for the modifications specified in CCG's CT-043-eq-eg-001.
- b) For structural aluminum over 3 mm thick, welding must meet the requirements of CSA W47.2 and W59.2, except for the modifications specified in CCG's CT-043-eq-eg-001.
- c) For structural stainless steel over 3 mm thick, welding must meet the requirements of CSA W47.1 and AWS D1.6 and the requirements in CCG's CT-043-eq-eg-001.

G 1.5 Documentation

G 1.5.1 Text documents

G 1.5.1.1 All text deliverables must be accompanied by a PDF file containing the complete document. The Contractor shall perform quality control to verify that the content exactly reproduces the content and formatting of the master document file. In case of amendments, a second PDF file containing only the amended pages must be provided.

G 1.5.1.2 Further guidance is provided in Canadian Coast Guard specification CA-014-000-NU-TD-002, Electronic Technical Data Deliverables.

G 1.5.2 Data collection

- G 1.5.2.1 The Contractor shall provide all documentation resulting from specified deliverables in electronic and printed versions. According to the contractors' quality assurance program, two hard copies of each document are required in two separate books. An electronic copy of all documentation must also be provided to the TA in accordance with the formats described in this section of the specifications.
- G 1.5.2.2 All copies of documents resulting from specified deliverables will be referred to as "Data Collection."
- G 1.5.2.3 The Contractor shall provide the TA with all files created as part of the Data Collection before the contract is deemed to be executed. The files must be in physical format (CD-ROM, DVD-ROM and USB key). Each task in the specifications must have its own folder named according to the specification task. For example, "G1.0 General Remarks."
- G 1.5.2.4 All documents, information materials and reports resulting from additional work must also be included in the data collection.

G 1.5.3 File identification

- G 1.5.3.1 N/A

G 1.5.4 Emails

- G 1.5.4.1 Project officer : will be determined at Contract award.
Procurement Specialist: steve.simoneau@tpsgc-pwgsc.gc.ca

G 1.5.5 File formatting

- G 1.5.5.1 All documents, reports, test results, certificates or information obtained by the Contractor in paper format must be scanned into unprotected Adobe PDF formatted files that are searchable and named according to the File Identification section of these specifications.
- G 1.5.5.2 All reports, test results, certificates or raw data obtained by the Contractor in electronic format must be converted into unprotected Adobe PDF formatted files named according to the File Identification section of these specifications. The original copy and the converted copy must be included in the data collection.

G 1.5.6 Photographs

G 1.5.6.1 All photographs obtained by the Contractor according to the requirements of the specifications must be provided in JPG format with a resolution of at least 640 x 480 and be named according to the File Identification section of these specifications.

G 1.5.7 Measurements, calibrations and readings

G 1.5.7.1 Recorded measurements, calibrations and readings must all be accompanied by the signature of the person who made them and must be dated and digitized in electronic format for inclusion in the data collection.

G 1.5.7.2 Unless otherwise indicated, the Contractor shall record dimensions in Imperial units with three significant digits and the equivalent in metric units.

G 1.5.7.3 The Contractor shall provide the TA with valid and current control values and calibration certificates for all instruments used for the testing and trial plan to prove that the instruments were calibrated in accordance with the manufacturer's instructions. These documents must be included in the data collection for all tasks requiring measurements.

G 1.5.8 Inspection and test records and certificates

G 1.5.8.1 Inspection or test records and certificates are referred to as deliverables in the tasks of the specification that requires them.

G 1.5.8.2 Inspection or test records and certificates must be included in a separate section of the data collection and filed or organized by specification number.

G 1.5.8.3 The Contractor shall maintain a complete and accurate record of all tests and trials performed on the vessel or on each piece of equipment. Before starting a test, all relevant test sheets and documents, including workshop test data, must be completed and attached to the test program.

G 1.5.8.4 All test and trial data in paper and electronic format must be legible. If necessary, handwritten documents may need to be reproduced in an electronic medium to be acceptable. The original copy must be signed by the regulatory agency, the TA, the Contractor and, if applicable, the subcontractors or FSRs who attended the tests. All data must be submitted to the TA in accordance with the Documentation section of the General Remarks.

G 1.5.8.5 The Contractor shall also provide the TA with the original copies of each certification document in an envelope bearing the name of the vessel and the words "Original Certificates."

G 1.6 **Drawings**

G 1.6.1 N/A

G 1.6.1 **Reference drawings – 3 copy**

G 1.6.2 N/A

G 1.7 **Manuals**

G 1.7.1 The Manuals section of the General Remarks is intended to be used as a reference for minimum standards where specified deliverables must be manuals.

G 1.7.2 **General information**

G 1.7.2.1 [N/A]

G 1.7.3 **Operating manuals**

G 1.7.3.1 [N/A]

G 1.7.4 **Maintenance manuals**

G 1.7.4.1 [N/A]

G 1.8 **Identification****G 1.8.1** **Identification plates**

G 1.8.1.1 [N/A]

G 1.8.2 **Labelling of cables**

G 1.8.2.1 Labelling of cables is designated as a deliverable in the tasks of the specification that requires it.

S 1.0 SERVICES

S 1.1 GENERAL INFORMATION

S 1.1.1 The purpose of this specification is to provide and connect the required services to the vessel as of the start of the drydocking and to disconnect them at the end of drydocking. These services will be supervised by the Chief Engineer and will remain connected throughout drydocking. The Contractor shall provide all the material and tools up to the connection points. It shall specify the cost of each service in its quote.

S 1.2 DOCKING

S 1.2.1 [N/A]

S 1.3 MOORING LINES

S 1.3.1 [N/A]

S 1.4 GANGWAYS

S 1.4.1 [N/A]

S 1.5 POWER SUPPLY

S 1.5.1 The CCG allows the Contractor to use the vessel's 120 V electrical power for the duration of the contract.

S 1.6 PROTECTION OF ROOMS DECKS AND ENGINE ROOMS

S 1.6.1 The Contractor shall repair, at its own expense, any damage resulting from its actions during performance of its work and that may be attributed to its performance. Any material used in a replacement or repair must comply with the criteria for the material provided by the Contractor, as indicated above in the section Tools and Materials Provided by the Contractor.

S 1.6.2 The Contractor shall protect all equipment and all neighbouring areas against damage. Work areas must be protected against flooding and water leaks, debris from sandblasting, welding, etc. Temporary tarpaulins must be placed over work areas.

S 1.7 **HEATING**

S 1.7.1 Vessels are constantly heated. Extended power cuts must be made with the permission of the Chief Engineer or TA.

S 1.8 **WORKPLACE INSPECTIONS**

S 1.8.1 The Contractor shall coordinate an inspection of the condition and location of items to be removed with the TA and the IA before performing the specified work or accessing a location to work in it.

S 1.9 **FIRE PROTECTION**

S 1.9.1 [N/A]

S 1.10 **PROJECT FACILITIES**

S 1.10.1 Note that toilets on board vessels will be out of service. But that adjacent premises will be available.

S 1.10.2 A construction trailer may be accepted on the premises with the prior consent of the base authorities and the technical service but is not mandatory.

10.0 Safety and Security

10.1 INSPECTION OF PORTABLE FIRE EXTINGUISHERS

10.1.A **Identification**

10.1.A.1 The Contractor shall inspect all fire extinguishers and renew the certification of all extinguishers whose certification date has passed.

10.1.B **References**

10.1.B.1 Equipment information

10.1.B.1.1 Portable fire extinguishers – see list.

10.1.B.2 Drawings

10.1.B.2.2 All drawings are indicated in the General Remarks. The following drawings are to be considered as reference drawings, as defined in the Drawings section of the General Remarks. .

Drawing no.	DRAWING TITLE	Number of sheets
	CCGS <i>Île Saint-Ours</i> – Portable fire extinguishers	

10.1.B.3 Regulations and standards

10.1.B.3.3 N/A

10.1.C **Statement of work**

10.1.C.1 The Contractor shall perform the following work:

10.1.C.1.1 Perform the annual inspection of portable and fixed fire extinguishers in the galley. Fire extinguisher inspection and maintenance must be entrusted to a qualified representative.

10.1.C.1.2 The Contractor shall remove the fire extinguishers in a sequence such that the number of fire extinguishers taken off the vessel is never more than a third (maximum 5) of those that are on board. The Chief Engineer will determine the order in which the fire extinguishers must leave the vessel.

10.1.C.1.3 Include the price of preventive maintenance, hydrostatic testing, refilling, and annual inspection according to the information found in the table.

10.1.C.1.4 Once the maintenance has been completed, return all the fire extinguishers to the vessel and put them back in place according to the Chief Engineer's instructions.

10.1.D **Proof of performance**

10.1.D.1 Inspection points

10.1.D.1.1 All work must be completed to the satisfaction of the Chief Engineer and the TC inspector.

10.1.D.2 Tests and trials

10.1.D.2.2 Fire extinguisher testing shall be done in compliance with Transport Canada regulations.

10.1.D.3 Certification

10.1.D.3.3 The Contractor shall provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor shall also send an electronic copy of all reports and certificates to the Vessel Maintenance Manager.

10.1.D.4 Documentation

10.1.D.4.4 The Contractor shall provide the Chief Engineer with two (2) hard copies of reports and checklists that explain in detail the work and necessary modifications. The Contractor shall also send an electronic copy of all reports to the Vessel Maintenance Manager.

10.1.D.5 Training

10.1.D.5.5 N/A

10.2 ANNUAL INSPECTION OF THE FIXED FIREFIGHTING SYSTEM

10.2.A **Identification**

10.2.A.1 The purpose of this specification is to perform maintenance on and certify the fixed fire suppression system on the CCGS *Île Saint-Ours*. Check the condition and connection of the copper lines of the switches and sirens.

10.2.A.1.1 The Contractor shall communicate with the Chief Engineer before undertaking the work for this item. This work must be performed in conjunction with the portable fire extinguisher maintenance without reducing the fire suppression capacity aboard the vessel.

10.2.A.1.2 The fixed firefighting system is a CO₂ system.

10.2.B **Reference**

10.2.B.1 N/A

10.2.C **Statement of work**

The Contractor shall perform the following work:

10.2.C.1.1 Provide authorized labour to test and inspect the vessel's CO₂ system as part of the annual inspection and certification of this system. The Chief Engineer must attend all tests.

10.2.C.1.2 Aside from the following tests, perform all tests required by the TC inspector on site. In the estimate, the Contractor shall provide the cost of testing the alarms (indicator lights and sirens) on all devices, testing the cylinders, testing ventilation closure devices, and testing slack loops and cables.

10.2.C.1.3 Clean the pipes and pneumatic actuators with air and ensure that they work properly. Pipes and nozzles must be free from obstruction.

10.2.C.1.4 Ensure that the alarm displays and sirens work properly.

10.2.C.1.5 Weigh each cylinder and record the results. At the end of the refit, the Contractor shall provide the Chief Engineer with copies of all certificates.

10.2.C.1.6 When the trials and inspections are completed, reassemble and reactivate the systems.

10.2.D **Proof of performance**

10.2.D.1 Inspection points

10.2.D.1.1 All work must be completed to the satisfaction of the Chief Engineer, the Vessel Maintenance Manager and the TC inspector.

10.2.D.2 Tests and trials

10.2.D.2.2 The Chief Engineer must be present for the system inspection and test.

10.2.D.3 Certification

10.2.D.3.3 The Contractor shall provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor shall also send an electronic copy of certificates to the Vessel Maintenance Manager.

10.2.D.4 Documentation

10.2.D.4.4 The Contractor shall provide the Chief Engineer with a printed paper copy of the report detailing the inspections, modifications, and repairs made prior to acceptance of this item. The Contractor shall also send an electronic copy of the report to the Vessel Maintenance Manager.

10.2.D.5 Training

10.2.D.5.5 N/A

10.3 FIRE DETECTION SYSTEM

10.3.A **Identification**

10.3.A.1 This specification is for the annual inspection and certification of the fire detection system.

10.3.B **References**

10.3.B.1 N/A

10.3.C **Statement of work**

The Contractor shall perform the following work:

10.3.C.1 The vessel is equipped with a Notifier AFP200 fire panel **and holds the Notifire programming licence.**

10.3.C.1.1 Schedule a visit from a TC inspector before starting the work.

10.3.C.1.2 Provide certified labour to conduct the annual inspection and certification of the fire detection system.

10.3.C.1.3 The fire detection system control panel is found on the port side of the wheelhouse.

10.3.C.1.4 All breaks and failures must be addressed as additional work on form 1379.

10.3.D **Proof of performance**

10.3.D.1 Inspection points

10.3.D.1.1 All work must be completed to the satisfaction of the Chief Engineer or the Vessel Maintenance Manager.

10.3.D.2 Tests and trials

10.3.D.2.2 N/A

10.3.D.3 Certification

10.3.D.3.3 The Contractor shall provide the Chief Engineer with two (2) paper copies of maintenance certificates along with the original. The Contractor shall also send an electronic copy of all reports and certificates to the Vessel Maintenance Manager.

10.3.D.4 Documentation

10.3.D.4.4 The Contractor shall provide the Chief Engineer with a printed paper copy of the report detailing the inspections, modifications, and repairs made prior to acceptance of this item. The Contractor shall also send an electronic copy of all reports and certificates to the Vessel Maintenance Manager.

10.3.D.5 Training

10.3.D.5.5 N/A

11.0 Hull and related structures

11.1 INSPECTION AND WELDING WORK

11.1.A **Identification**

11.1.A.1 This specification covers certain aluminum welding work on the vessel, on the starboard bridge deck ladder. Inspect the lowering mast for integrity and re-do the aluminum welds if necessary. Check the attachment points to see if they are safe with the exerted force of 1,100 lbs at their locations.

11.1.B **References**

11.1.B.1 **Equipment information**

N/A

11.1.B.2 **Drawings**

Drawing no.	DRAWING TITLE	Number of sheets
11.1.B.2	Photo of the ladder	
11.1.B.3	Photo of the mast	
11.1.B.4	Photo of the anchor points	

11.1.B.2 Photo of the ladder (Figure 1 next page)



Figure 1

11.1.B.3 Photo of the mast



Figure 2

11.1.B.4 Photos of the anchor points

*Figure 3***11.2 MODIFICATION OF THE LADDER****11.2.A Statement of work**

11.2.A.1 The work consists of welding a round aluminum hand guard 26 ¼" L x 1 ¼" diam. on the left of the starboard ladder, on the bridge deck (see 11.1B2).

11.2.B Proof of performance**11.2.B.1 Inspection points**

11.2.B.1.1 All work must be completed to the satisfaction of the Chief Engineer or the Vessel Maintenance Manager.

11.2.B.2 Tests and trials

11.2.B.2.2 N/A

11.2.B.3 Certification

11.2.B.3.3 N/A

11.2.B.4 Documentation

11.2.B.4.4 N/A

11.2.B.5 Training

11.2.B.5.5 N/A

11.3 MAST AND ATTACHMENT POINTS

11.3.A Statement of work

11.3.A.1 The work consists of checking the integrity of the aluminum welds of the pivot at the base of the lowering mast, with a dye penetrant test to detect cracks.

11.3.A.1.1 Check the load capacity of the attachment points used by the crew to raise and lower the mast using a static test as recommended by a structural inspector.

11.3.B Proof of performance

11.3.B.1 Inspection points

11.3.B.1.1 Testing will be done in the presence of a GCC Technical Authority

11.3.B.2 Tests and trials

11.3.B.2.2 N/A

11.3.B.3 Certification

11.3.B.3.3 N/A

11.3.B.4 Documentation

11.3.B.4.4 The Contractor shall provide the Chief Engineer with a printed paper copy of the report detailing the inspections, modifications, and repairs made prior to acceptance of this item. The Contractor shall also send an electronic copy of the report to the Vessel Maintenance Manager.

11.3.B.5 Training

11.3.B.5.5 N/A

12.0 Propulsion and manoeuvring

12.1 MAINTENANCE OF PROPULSION ENGINES

12.1.A **Identification**

12.1.A.1 This specification is for performance of annual maintenance on the two Detroit Diesel engines and their respective transmissions.

12.1.B **References**

12.1.B.1 Equipment information

12.1.B.1.1 Port propulsion engine:

Model: 8VF 8082-3000

Series: 8VF100926

12.1.B.1.2 Starboard propulsion engine

Model: 8VF 8082-7000

Series: 8VF100917

12.1.B.2 Transmission: Pay & Brinck A/S, PB130

Port: Model: 1101

Starboard: Model: 1102

12.1.B.2 Drawings

12.1.B.2.1 All drawings are indicated in the General Remarks. The following drawings are to be considered as reference drawings, as defined in the Drawings section of the General Remarks. .

Drawing no.	DRAWING TITLE	Number of sheets
	Detroit Diesel Series 92 manual	
	Detroit Diesel Series 92 maintenance recommendations	
	Pay & Brinck A/S, PB130 transmission manual	
	Pay & Brinck A/S transmission maintenance recommendations	

12.1.B.3 Regulations and standards

N/A.

12.1.C Statement of work

- 12.1.C.1 Provide the services of an engineer for the annual maintenance of the Detroit Diesel Series 92 engines and their Pay & Brinck gearboxes.
- 12.1.C.2 The Contractor's engineer must be an authorized representative of the manufacturer of the Detroit Diesel Series 92 engines and their Pay & Brinck gearboxes to perform the annual maintenance.
- 12.1.C.3 Complete visual inspection of the engines
- 12.1.C.4 Change all injectors on the engines.
- 12.1.C.5 Adjust the valves.
- 12.1.C.6 Camera inspection of all cylinders.
- 12.1.C.7 Performing the adjustments and starting up the engines must demonstrate that power output and overall operation are satisfactory and in accordance with the manufacturer's specifications.

Transmissions:

- 12.1.C.8 Check the transmission clutch adjustment as the delays are too long and unequal between the transmissions.
- 12.1.C.9 Check the clutch pack clearance.
- 12.1.C.10 If other mechanical parts need to be replaced, the cost of parts shall be adjusted on form 1379.
- 12.1.C.11 All parts used shall be OEM, and the exchange system is accepted.

12.1.D Proof of performance

12.1.D.1 Inspection points

- 12.1.D.1.1 All work must be completed to the satisfaction of the Chief Engineer and the Coast Guard representative.

12.1.D.2 Tests and Trials

12.1.D.2.2 When the vessel is cleared of ice, the technician must perform an engine operation test for one hour and the engine must be placed at 100% load or as recommended by the Chief Engineer.

12.1.D.2.3 A written report must be submitted before the end of work indicating the different engine parameter values (RPM, OIL PRESSURE, WATER TEMP., EXH. TEMP., OIL TEMP., etc.) during the final tests.

12.1.D.2.4 All safeguards shall be checked, and the values recorded in the report.

12.1.D.3 Certification

12.1.D.3.5 The Marine Safety expert and Coast Guard representatives must attend start-up and final testing to verify engine protections. They must be notified 48 hours in advance to give them time to arrive.

12.1.D.4 Documentation

12.1.D.4.6 The technician must submit a written report in paper and electronic format no later than five days after the work.

12.1.D.4.7 The report must include the following information:

- Date of work and date of report
- Technician name
- Diagnostic of problems, if necessary
- Description of work performed
- A list of materials and all parts replaced or installed

12.1.D.5 Training

12.1.D.5.8 [N/A]

13.0 Power generation systems

13.1 MAINTENANCE OF PERKINS GENERATORS

13.1.A **Identification**

13.1.A.1 This specification is for performance of annual maintenance on both Perkins generators.

13.1.B **References**

13.1.B.1 Equipment information

13.1.B.1.1 Port generator – Perkins 4.236 4-cylinder:

- Serial number: LD20663U97544L

Starboard generator – Perkins 4.236 4-cylinder:

- Serial number: LD20663NT743303

13.1.B.2 Drawings

13.1.B.2.2 All drawings are indicated in the General Remarks. The following drawings are to be considered as reference drawings, as defined in the Drawings section of the General Remarks. .

Drawing no.	DRAWING TITLE	Number of sheets
	Perkins 4-236 manual	

13.1.B.3 Regulations and standards

N/A.

13.1.C **Statement of work**

13.1.C.1 Provide the services of an engineer for the annual maintenance of the Perkins diesel engines.

13.1.C.2 The Contractor's engineer must be an authorized representative of the engine manufacturer, Perkins Diesel.

13.1.C.3 Inspect valve clearances and adjust if necessary.

- 13.1.C.4 Complete visual inspection of the engines.
- 13.1.C.5 Perform the engine commissioning and adjustments. Must demonstrate that power output and overall operation are satisfactory and in accordance with the manufacturer's specifications.
- 13.1.C.6 If other mechanical parts need to be replaced, the cost of parts shall be adjusted on form 1379.
- 13.1.C.7 All parts used shall be OEM, and the exchange system is accepted.

13.1.D **Proof of performance**

13.1.D.1 Inspection points

- 13.1.D.1.1 All work must be completed to the satisfaction of the Chief Engineer.

13.1.D.2 Tests and trials

- 13.1.D.2.2 When the vessel is cleared of ice, the technician must perform an engine operation test for one hour and the engine must be placed at 100% load or as recommended by the Chief Engineer.
- 13.1.D.2.3 A written report must be submitted before the end of work indicating the different engine parameter values (RPM, OIL PRESSURE, WATER TEMP., EXH. TEMP., OIL TEMP., etc.) during the final tests.
- 13.1.D.2.4 All safeguards shall be checked, and the values recorded in the report.

13.1.D.3 Certification

- 13.1.D.3.5 The Marine Safety expert and Coast Guard representatives must attend start-up and final testing to verify engine protections. They must be notified 48 hours in advance to give them time to arrive.

13.1.D.4 Documentation

- 13.1.D.4.6 The technician must submit a written report in paper and PDF format no later than five days after the work.
- 13.1.D.4.7 The report must include the following information:
- Date of work and date of report
 - Technician name

- Diagnostic of problems identified
- Description of work performed
- A list of materials and all parts replaced or installed

13.1.D.5 Training

13.1.D.5.8 [N/A]

14.0 Power distribution systems

14.1 ELECTRICAL DISTRIBUTION

14.1.A Identification

14.1.A.1 The work consists of installing additional 120 volt electrical outlets and replacing others on the vessel. All work must be done in accordance with TP127 and/or IEEE 45.

14.1.B References

- o List of electrical circuits on the *Saint-Ours*
- o Photos

Drawing no.	DRAWING TITLE	Number of sheets
14.1.B.1	Outlet to be replaced	
14.1.B.2	Replace with a double	
14.1.B.3	Outlet to be installed	
14.1.B.4	Outlet to be installed near the button station	

14.1.B.1 Outlet to be replaced



Figure 4

Replace with a double

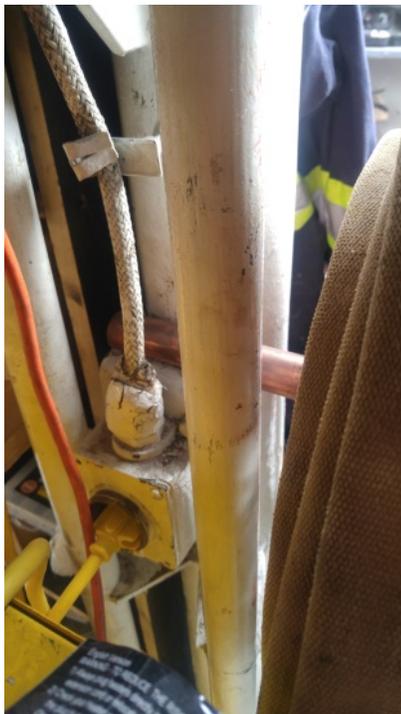


Figure 5

14.1.B.2 Outlet to be installed



Figure 6

Outlet to be installed near the button station



Figure 7

14.1.C **Statement of work**

- 14.1.C.1 The Contractor shall provide all the necessary material and make the reglementary bulkhead glands. The capacity of the networks concerned must also be ensured. If it is necessary to add a circuit, the costs will be adjusted on PWGSC form 1379.
- 14.1.C.1.1 Replace the two female receptacles of the exterior outlets on the port and starboard accommodations with marine-type receptacles, which are easier to find than those currently in place. If it turns out to be difficult to find the receptacles, we will replace the entire housing. Costs will be adjusted on PWGSC form 1379.
- 14.1.C.1.2 Completely replace the single outlet located on the central column of the bilge with a waterproof double outlet with cover and install a second identical outlet on the opposite side of the same column.
- 14.1.C.1.3 Install a new double outlet on the portside front on the bulwark near the start buttons of the hydraulic pumps. It should be waterproof and marine type, with a ½" bulkhead gland and a rigid pipe to the service box of about 1' or 2' maximum. Anticipate between 25' and 30' of wires.

14.1.D **Proof of performance**

14.1.D.1 Inspection points

- 14.1.D.1.1 All work must be completed to the satisfaction of the Chief Engineer, the Vessel Maintenance Manager, the TC Inspector and the Jastram Technical Advisor.

14.1.D.2 Tests and trials

- 14.1.D.2.2 First, dockside testing will be carried out with all parties mentioned in the previous paragraph.
- 14.1.D.2.3 When the dockside testing is satisfactory for all parties, there will be sea trials lasting at least four (4) hours with the Jastram Advisor and a representative of the Contractor.

14.1.D.3 Certification

N/A

14.1.D.4 Documentation

N/A

14.1.D.5 Training

N/A

14.2 ELECTRICAL INSULATION TEST

14.2.A Identification

- 14.2.A.1 Conduct insulation tests on the vessel's AC electrical circuits as required by Transport Canada regulations for vessels over 20 years old.

14.2.B References

N/A

14.2.C Statement of work

The Contractor shall perform the following work:

- 14.2.C.1 Conduct insulation tests on all the vessel's AC electrical circuits and record the results in the "List of electrical circuits on the *Ile St-Ours* document.
- 14.2.C.1.1 All tests shall be performed between phase and ground. For circuits containing more than one phase, each phase must be tested independently.
- 14.2.C.1.2 Always take the notes on the distribution lists into consideration to prevent damage to equipment.
- 14.2.C.1.3 The voltages used for the insulation tests are recorded in the "List of electrical circuits on the *Ile St-Ours* document.
- 14.2.C.1.4 For the distribution circuits:
- 14.2.C.1.5 Disconnect all devices connected to the circuit to be tested (anything plugged into an outlet).
- 14.2.C.1.6 All breakers on the circuit should be closed (ON) to conduct the test.
- 14.2.C.1.7 Open (OFF) the breaker for the circuit to be tested.
- 14.2.C.1.8 For the generators:
- 14.2.C.1.9 Open (OFF) the breaker for the generator.
- 14.2.C.1.10 Disconnect the voltage regulator.
- 14.2.C.1.11 For the electric motors:
- 14.2.C.1.12 Open (OFF) the motor breaker.

14.2.C.1.13 Test all the phases independently downstream of the breaker (between the breaker and the motor).

14.2.C.1.14 Find and open starter for the motor to be tested and perform the test on all phases downstream of the starter (between the starter and the motor).

All tested circuits with results below 5 megohms must be investigated to identify and correct the cause of the insulation loss.

14.2.D **Proof of performance**

14.2.D.1 Inspection points

14.2.D.1.1 All work must be completed to the satisfaction of the Chief Engineer, the Vessel Maintenance Manager and the TC inspector.

14.2.D.2 Tests and Trials

N/A

14.2.D.3 Certification

N/A

14.2.D.4 Documentation

14.2.D.4.2 The Contractor shall provide the Chief Engineer with two (2) hard copies of the original inspection report. The Contractor shall also send an electronic copy of certificates to the Vessel Maintenance Manager.

14.2.D.4.3 The report must be made with the document “List of electrical circuits on the *F.C.G. Smith*” digitally filled out, signed and dated by the person who performed the work.

14.2.D.4.4 The report must indicate the make, model and serial number of the device used to perform the electrical insulation tests.

14.2.D.5 Training

N/A

15.0 Auxiliary systems

15.1 N/A

16.0 Domestic systems

16.1 CLEANING AND INSPECTION OF THE CENTRAL VENTILATION SYSTEM

16.1.A **Identification**

16.1.A.1 Conduct a thorough cleaning of the ventilation system.

16.1.B **References**

16.1.B.1 Equipment information

16.1.B.1.1 Plan No. 42-83-803 Ventilation AC layout

16.1.C **Statement of work**

The Contractor shall perform the following work:

16.1.C.1 Conduct a thorough cleaning of the ship's ventilation system using mechanical suction/pulsing/brushing (octopus) methods and a vacuum equipped with a HEPA filter.

16.1.C.1.1 The ventilation system includes the following components: the central ventilation ducts for the bathroom exhaust fans and the dryer; heat exchangers; diffusers; and external air intake.

16.1.C.1.2 Degrease the galley hood, including its fan and exhaust duct.

16.1.C.1.3 Take the necessary measures to adequately protect furniture and equipment during the work.

16.1.D **Proof of performance**

16.1.D.1 Inspection points

16.1.D.1.1 The work must be completed to the complete satisfaction of the Coast Guard representative.

16.1.D.2 Tests and trials

N/A

16.1.D.3 Certification

N/A

16.1.D.4 Documentation

16.1.D.4.2 The Contractor shall provide the Chief Engineer with two (2) paper copies and one electronic copy of a report indicating the general condition of the ventilation system before and after the work. This report must include photos of the various components of the ventilation system before and after cleaning.

16.1.D.5 Training

N/A

16.2 CLEANING AND INSPECTION OF THE VENTILATION, HEATING & AIR CONDITIONING SYSTEM

16.2.A Identification

16.2.A.1 Perform the annual inspection of the air conditioning system.

16.2.A.2 Conduct a thorough cleaning of the central ventilation system.

16.2.A.3 The ventilation system includes the following components: the central ventilation ducts for the bathroom exhaust fans and the dryer; heat exchangers; diffusers; and external air intake.

Note: The technician(s) doing the work must hold a valid Air Conditioning Repairman card, indicate their number on the report, and provide a copy of the card to the CCG representative.

16.2.B References**16.2.B.1 Equipment information**

- Carrier 50VL-C36-50 # série 1117C09868

16.2.B.2 Drawings

16.2.B.2.1 All drawings are indicated in the General remarks. The following drawings should be considered as reference drawings, as defined in the Drawings section of the General Notes.

Drawing number	Drawing Title	
42-83-803	Ile Saint Ours Ventilation	
	50VL-C Owner`s information manual and product data	

16.2.B.3 Regulations and standards

16.2.B.3.2 The following regulations and standards apply to the work performed in this section; the Contractor must ensure that all work performed in this section complies with the regulations and standards, as well as federal and territorial regulations and standards.

Fleet Safety and Security Manual Procedures (FSSMP)	Titre	include – Yes/No
Section 7.0 7.F.10	Halocarbures, contrôle, registre d'entretien	

16.2.C Statement of Work

The Contractor shall perform the following work:

16.2.C.1 Perform a full inspection of all heating, ventilation, and air conditioning components. All breaks and failures must be addressed as additional work on form 1379.

16.2.C.1.1 Conduct a test to detect refrigerant leaks on all air conditioning system components using an electronic leak detector with a suitable minimum detection level.

16.2.C.1.2 Check the operating parameters.

16.2.C.1.3 The Contractor shall affix a label with its contact information to each piece of equipment, stating that the equipment has been inspected and tested.

16.2.C.1.4 Conduct a thorough cleaning of the ship's ventilation system using mechanical suction/pulsing/brushing (octopus) methods and a vacuum equipped with a HEPA filter. Degrease the galley hood, including its fan and exhaust duct.

The Contractor shall take the necessary measures to adequately protect furniture and equipment during the work.

16.2.D Proof of performance**16.2.D.1 Inspection points**

16.2.D.1.1 The work must be completed to the complete satisfaction of the Coast Guard representative.

16.2.D.2 Tests and trials

N/A

16.2.D.3 Certification

N/A

16.2.D.4 Documentation

16.2.D.4.2 The Contractor shall provide the Chief Engineer with two (2) paper copies and one electronic copy of a report indicating the general condition of the ventilation system before and after the work no later than five days after the end of the work. This report must include photos of the various components of the ventilation system before and after cleaning.

16.2.D.5 Training

N/A

17.0 Deck equipment

17.1 INSPECTION OF THE SEA CRANE 180 CRANE

17.1.A Identification

17.1.A.1 Conduct the annual verification, certification and maintenance of the HIAB Sea Crane 180 SAE crane, series Z39122. A technician qualified for this type of equipment must perform the inspections and issue a report for obtaining a T2 certificate.

17.1.B References

17.1.B.1 **Equipment information**

17.1.B.1.2 Hiab Sea Crane 180 crane, 10,000 kg capacity

17.1.B.2 **Drawing**

17.1.B.2.1 All drawings are indicated in the General remarks. The following drawings are to be considered as reference drawings, as defined in the Drawings section of the General Remarks. .

Drawing no.	DRAWING TITLE	Number of sheets
	Hiab 180 Sea Crane manual	
42-83-405	Deck crane	
42-83-710	Hydraulic oil diagram	
	Pull Master M12 service manual	

17.1.B.3 **Regulations and standards**

17.1.B.3.2 16.2.B.3.2 The following regulations and standards apply to the work performed in this section. The Contractor shall ensure that all work performed in this section complies with regulations and standards, as well as with federal and territorial regulations and standards.

Fleet Safety and Security Manual Procedures (FSSMP)	Titre	include – Yes/No
Section 10.0	Maintenance of loading equipment	

17.1.C Statement of work

The Contractor shall perform the following work:

17.1.C.1 Switch off all hydraulic pumps, both primary and standby.

17.1.C.1.1 Check the Pull Master M12 winch, replace the 80W-90 oil from the side gear and visually inspect the oil to check for any internal damage. Check the integrity of the drum.

17.1.C.1.2 Check the integrity of the steel cable and its hook.

17.1.C.1.3 Check for leaks or damage to the cylinders.

17.1.C.1.4 Check all hoses and rigid connections for any anomalies or leaks.

17.1.C.1.5 Visually check the pulley and structure for any defects.

17.1.C.1.6 Test the crane and check that it is capable of holding its load to the standards.

17.1.C.1.7 For all identified anomalies and after verification with the TA, costs will be adjusted on PWGSC form 1379.

17.1.D Proof of performance**17.1.D.1 Inspection points**

17.1.D.1.1 All work must be completed to the satisfaction of the Chief Engineer and the Coast Guard representative.

17.1.D.2 Tests and trials

17.1.D.2.2 The Contractor shall demonstrate to the Chief Engineer or the TA that the equipment is working well and safely.

17.1.D.3 Certification

17.1.D.3.3 The Contractor shall provide the Chief Engineer with two (2) hard copies of the annual inspection certificates (T1) along with the original. The Contractor shall also send an electronic copy of the annual inspections to the Vessel Maintenance Manager.

17.1.D.4 Documentation

17.1.D.4.4 The technician must submit a written report in paper and electronic format no later than five days after completion of the work.

17.1.D.4.5 The report must include the following information:

- Date of work and date of report
- Description of work performed
- A list of materials and all parts replaced or installed
- T-1 Certificate for the crane.

17.1.D.5 Training

N/A

17.2 ANNUAL INSPECTION OF THE DAVIT

17.2.A Identification

17.2.A.1 Perform a visual inspection of the manual davit and its Jemmar CFF 2200 winch. A technician qualified for this type of equipment must perform the inspections and issue a T2 certificate.

17.2.B References

N/A

17.2.C Statement of work

17.2.C.1 Check the integrity of the steel cable and its hook.

17.2.C.1.1 Check the structural integrity.

17.2.C.1.2 Perform a free-fall braking test with a weight.

17.2.D Proof of performance

17.2.D.1 Inspection points

17.2.D.1.1 The work must be completed to the complete satisfaction of the Coast Guard representative.

17.2.D.2 Tests and trials

17.2.D.2.2 The Contractor shall demonstrate to the Chief Engineer or the TA that the equipment is working well and safely.

17.2.D.3 Certification

17.2.D.3.3 The Contractor shall provide the Chief Engineer with two (2) hard copies of the annual inspection certificates (T1) along with the original. The Contractor shall also send an electronic version of the annual inspections to the Vessel Maintenance Manager.

17.2.D.4 Documentation

17.2.D.4.4 The technician must submit a written report in paper and electronic format no later than five days after completion of the work.

17.2.D.4.5 The report must include the following information:

- Date of work and date of report
- Description of work performed
- A list of materials and all parts replaced or installed
- T-2 Certificate for the davit.

17.2.D.5 Training

N/A

18.0 Communications and navigation

N/A

19.0 Control systems

N/A