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**SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

**Vendor/Firm Name and Address
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Title - Sujet CCGS EDWARD CORNWALLIS -DRYDOCK	
Solicitation No. - N° de l'invitation F7049-190047/A	Amendment No. - N° modif. 007
Client Reference No. - N° de référence du client F7049-190047	Date 2019-12-19
GETS Reference No. - N° de référence de SEAG PW-\$\$MD-034-27482	
File No. - N° de dossier 034md.F7049-190047	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2020-01-07	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Green, Dave	Buyer Id - Id de l'acheteur 034md
Telephone No. - N° de téléphone (819) 420-2900 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:	

Instructions: See Herein

Instructions: Voir aux présentes

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Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

Solicitation Amendment # 7 is issued to:

- 1) Add TA Speaking Notes
- 2) Respond to Vendor Questions
- 3) Upload Additional Drawings and Documents
- 4) Modify Annex A

1) Add TA Specification Speaking Notes

Bidder's Conference Notes
2019-10-30

Annex "A", CCGS Cornwallis VLE Specification Review

Paul Turner of the Vessel Life Extension (VLE) Program provided an overview of the specifications as follows and addressed questions. The questions and answers were documented in Solicitation Amendment 005 dated December 1, 2019.

Sections 1 – 7

These contain general information that pertains to all work sections of the specification, sections 10-50 inclusive. This includes common information on piping, mechanical systems, electrical, documentation and trials requirements.

Section 1

This section contains general vessel information and facility requirements for the CCG while at the shipyard. I will note section 1.7 – Fees and Costs. Class society fees are not included in this section as CCG will have contracts in place for the attendance of ABS and if need be, DNVGL for some of the specification items.

Section 1.7.1.3 notes that the Cornwallis is enrolled in the DSIP program already and will have most inspections done by ABS on behalf of Transport Canada.

Section 1.12 – Project Management. This is a major conversion of many large components of the vessels propulsion system and auxiliary machinery, as well as a new crane installation. Project management with the associated reporting functions is critical for the CCG to be able to track the critical path as it changes during the project. This section is critical for the successful completion of the VLE. It cannot be stated strongly enough how much effort project management will take, this will require active project management and is not to be limited to the reporting requirements within the Contract. Please note that in the Price Data Sheet, this section has been expanded to ensure the hours required are captured in the bids.

Some of the items in section 12 must be delivered within 5 days of Contract Award. CCG will be looking for direction from the Contractor at this time as to scheduling for the delivery of GFE. CCG has GFE staged literally around the world, and to ensure timely delivery to the Contractor we will need the schedule confirmed for the arrival of major components.

Section 2

This section covers the general operation conditions of any equipment. It also has section 2.2.7 related to asbestos aboard and section 2.2.8 for lead paint aboard – there are small areas of the ship that are affected. Please review these sections carefully as well as the information in the TDP.

Section 3

This section outlines the mechanical requirements for the project, including piping and material requirements.

Section 4

Section 4 specifies the electrical requirements, in particular the Load Analysis, Electrical Single Line and Coordination Study and Short Circuit Analysis that must be completed during the course of the project, and incorporates all the changes that occur in each of the subsequent specification items.

Section 5

The Electromagnetic Interference section 5.5 (Grounding and Bonding requirements) will be the referred to most during this VLE.

Section 6

Each specification section outlines deliverables, however section 6 must be referred to as well as most sections will affect the requirements here for new As Fitted drawings, as well as tests, trials, inspection records and certificates. Bidders must keep this section in mind when pricing the Deliverable section of all the different specification items, as well as the Electrical System documents required from Section 4.

Section 7

Tests, Dock Trials and Sea Trials are the final performance checks for the vessel and it is critical that the Bidders include the level of effort on the Price Data Sheet required to develop the trial procedures, sequences and data sheets.

Section 8

This is the Berthing, Mooring, Docking and Security section which outlines the requirements for the vessel while it is at the Contractor's Facility.

Please note section 8.3.1.7 "A minimum clearance of 1600mm (5.25 feet) must be available below the keel" in order to meet the clearance requirement for installation of the new gensets.

Section 9

Inclining requirements and stability book. Will require a lightship check to conform to the TCMS requirements in TP7301e. The loading conditions are expected to be the minimum, ABS may require more conditions.

Section 10

Outlines the FSR requirements and contact information for the project.

Note: There will be clarification on the specification items that Trihedral will be attending to (Trihedral instead of Techsol for Alarm and Monitoring work in different specification items).

Section 11

Propulsion Generator replacement. This is the removal of the Alco gensets with new Wartsila W26 gensets. As you saw during the viewing yesterday, the removal work will be extensive.

Of note in this section (11.3.1.3) is the assistance to the yard that CCG has undertaken by engaging Wartsila under the existing engine contract to assist in coordinating of the commissioning plans for the major propulsion components. This includes:

- A) ABB for the cycloconverter;
- B) Madsen for the Woodward governor system that controls the Wartsila engines;
- C) Siemens for the Circuit breakers, MFRs and Mimic Panel commissioning;
- D) Trihedral for the Alarm and Monitoring system.

The provision of the Wartsila Site Manager does not remove the requirement for the 3 Commissioning FSRs from Wartsila to get the gensets operational.

Please note section 11.3.1.6 – this is a Class approved installation engineering package, including the path for insertion through the hull. The Contractor must not deviate from the approved drawings.

It is noted in this section that the gensets and auxiliary machinery must not be dismantled at all during the installation process. All supplied equipment is fully tested and operational and must remain that way to maintain warranties.

CCG has will provide AutoCAD versions of all drawings for this section to the Contractor. The CCG will also provide a 3D Inventor file for the Contractor's use.

The component lists that are attached to each of the system drawings supplied and the cable lists are complete. The Piping Material List (5546-789-001) is complete for all piping modeled in 3D – this does not included piping less than 2" in diameter so the individual system sections of the specification has allowances to cover the costs of supply, design and installation of the small diameter piping.

Section 12

Vessel commissioning. With the extensive work involved with many different firms providing products, and set up for the repowering of the Ann Harvey, we have engaged Wartsila to provide some project coordination to support the shipyard. This involves pre-planning so that the winning bidder will have an integration plan upon contract award. It is hoped that the collaborative effort of all the main propulsion system contractors will help when we get to the commissioning stage in helping the shipyard in the coordination of FSRs, trials planning and final testing of the ship.

With this in mind, after the contract is awarded and the Contractor has had time for its engineering team to review the details of the specifications, the CCG would like to have an extended technical kick off meeting with the Contractor to review the specs, the drawings and the Installation Instructions in order to address any questions, provide clarifications and ensure the Contractor has the information needed to do purchasing and preparation for the ship's arrival.

Section 13

Bow Thruster Replacement – This is the removal of the existing thruster and control system and replacing with new equipment. Much of this area in the foscle is in the same area as the Crane Replacement, so scheduling of work will be a challenge.

Section 14

Auxiliary Generator Replacement – This is the replacement of the existing genset with a new Cat C32 unit.

Section 14.3.2.1 – drawing number is incorrect, it is J16033-S01-R0, which is in the TDP.

This item is also in the engine room so interference with the Propulsion Generator installation is a concern to CCG.

Section 15

Buoy Crane Replacement – the old Speedcrane will be removed, as well as the goal post mast, and winch compartment on top of the foscle. The new crane pedestal is being supplied by CCG to be installed in #3 and 4 fuel tanks. This installation requires the removal of existing pipe conduits for both piping and electrical cables running through these tanks. The pulling back and running cables through new transits will require substantial effort. There is also many small modifications and relocations of equipment in the foscle area, much of it interfering in the same work area as the Bow Thruster.

Section 16

Forward Mast – with the removal of the goal post mast, the Contractor is to design and install a new forward mast and relocate the navigation equipment currently on the goal post mast.

Section 17

Hull Cleaning and Coating – this is the usual cleaning of the hull and touch up of the underwater, ice belt and above waterline hull coating.

Section 18

Hull Inspection and Welding – a normal refit item.

Sections 19, 20, 21 and 22

Starboard Tailshaft Inspection, Sterntube Wear-down, Sterntube Seal Inspection and Rudder Inspections – usual dry dock inspection items.

Section 23

Seabay, Sea chests and Sea Strainer inspections – ordinary inspections.

Section 24

Thrust Block Inspection – nothing to note.

Section 25

Hull Condition Survey – this is an extensive ABS survey of the hull, tanks, voids and spaces. ** Shot number should read 5000 shots and will be amended on pricing data sheet**

Section 26

Cycloconverter Replacement. CCG is in a supply and install contract with ABB for this item. For this specification item, CCG will have ABB performing specific tasks to ensure warranty of the new units, with the Contractor providing the support to be bid on as listed in section 26.3.4.5. This is an extensive item, with the wiring for this causing interference in the motor room, and up to the bridge through numerous transits.

Section 27

Central Cooling Leslie Valve – one valve is being replaced.

Section 28

Sewage Treatment Plant modifications – extensive modifications to the system.

Section 29

Damage Gunnel Replacement – steel repair on the main deck.

Section 30

Potable Water Tank Coating Replacement – a fairly standard refit specification item.

Section 31

Hot Well Filter and Piping – replacement of sections of piping and filter relocation.

Sections 32 and 33

Ventilation Duct and Galley Equipment Cleaning – all usual refit cleaning items.

Sections 34, 35, 36, 37, 38

Sea Water Pumps, Sea Water Pump Motors, Electrical Insulation Survey, Ballast Tank Survey and Fixed Fire Fighting Systems are normal refit survey items.

Sections 39, 40, 41 and 42

Miranda Davit, Lifeboat Davit, Life Raft and Barge Davit are usual annual survey items.

Sections 43 and 44

External Decks and Deck Attachments – two external deck painting specification items.

Sections 45 and 46

Void Spaces and Fuel Tanks – normal dry dock survey items.

Section 47

CO2 System Retrofits – upgrades to the systems in the CO2 Room, Forward Cargo hold, FM200 Compartment and Aft Hold areas of the ship.

Section 48

AMS and FM200 Upgrades is to provide assistance to Trihedral in order to upgrade the alarm system.

Section 49

Doppler Speed Log Replacement – some of the wiring in this specification item has already been installed and thus the scope will be reduced somewhat in an upcoming solicitation amendment. This will clarify the wiring remaining to be installed by the Contractor.

Section 50

Propulsion Consoles, Breakers and Ground Detection – these items are being done in support of the new Propulsion system upgrades being done with the new Propulsion Generators and Cycloconverter replacement. The Contractor will be supporting Techsol in this specification item.

2) Respond to Vendor Questions

Q25. A) 15.3.1.2: Palfinger FSR must be on site to provide guidance and instruction on mounting, securing, electrical connection, commissioning, as well as dock and sea trials. The Palfinger FSR must perform the final electrical connections to all the Palfinger components
Can you please clarify if Palfinger is responsible for the electrical connections and/or just the supervision of the electrical terminations?

b) 15.3.17 Electrical New equipment supply by the contractor.

Can you specify who will be responsible of the electrical connection of the equipment? FSR or Contractor?

A25. a) Section 15.3.1.2 will be modified to read:

15.3.1.2 Palfinger FSR must be on site to provide guidance and instruction on mounting and securing, electrical connections for Palfinger supplied electrical cabinets, and commissioning, as well as dock and sea trials. The Palfinger FSR must perform the final electrical connections to all the Palfinger Crane slip ring.

b) In accordance with the Technical – General section 15.3.1.4 :

The Contractor must perform all removals and install all new equipment, including all wiring, all associated cabling needed for the interconnection between crane components, switchboard and electrical control cabinets. The Contractor is responsible for all cable runs, transits, and securing the wiring in any electrical enclosures.

Q26. a) 4.2 Load Analysis

The load analysis (drawing no. VNDB 352-01) and the electrical one-line diagram 5546-85051-01 RevC does not appear to be representative of the current vessel loads configuration. Should the bidders build the load analysis study based only on these drawings and the equipment to be replaced/updated during this refit or are there more updated drawings available reflective of the current load configurations?

Validating the current configuration will require many additional hours once in contract. In light of this, would you be in agreement to adding the following wording (or similar) to the requirement?

On 4.2.1.1 The contractor must use available existing documentation namely: Load Analysis no xx, Electrical one-line no xx to build the load analysis study. Any cost to correct the load analysis if there is a discrepancy between the supplied documentation and the actual current vessel configuration will be adjusted via 1379 process.

b) 4.5 Short Circuit Current Analysis

Normally the Short Circuit Current Analysis is just a study. The firm conducting the analysis does not have the capability to identify/design/engineer alternative means to keep the current below 50Ka. The amount of KA is directly related with the Wartsilla Main Engine Capacity, size and length of the main cabling.

Request that you please just remove this sentence from the Short Circuit Current Analysis:

In 4.5.1.1 Please completely remove from the spec (The analysis calculation must be performed before switch gear selection.....to fuses, normally open disconnect links.)

A26. a) The requirement of 4.2.1.1 is a load analysis for the vessel, including the refit work. There are no other updated drawings available. The Contractor must use the existing information, the supplied load analysis information in the Technical Data Package for the new components being installed and on site verifications during the project to ensure a final "As-Fitted" load analysis is completed in accordance with section 4.2.

b) Section 4.5.1.1 will be modified to read:

4.5.1.1 The Contractor must conduct a short circuit current analysis and it must be maintained. The Contractor must update the short circuit analysis monthly and an electronic copy must be provided to the IA and the TA at monthly progress reviews or at each design change which has a significant impact on the electrical system. The analysis calculation must be in accordance with Transport Canada requirements.

The Contractors must note that the requirement remains in section 4.5.1.2 to have a final "As-Fitted" short circuit current analysis calculations must be ABS approved.

Q27. At 16.3.5.3 for the nav & com equipment relocation.

- a) Would you please provide a list of items you want us to take from the FWD mast to be relocated to the top of the W/H.
- b) Would you also please provide the power supply location of these items, size of cables required and cable route/length/penetrations?

A27. a) The existing search light assembly must be removed from the existing goal post mast. The preference would be to have the search light placement incorporated in the new forward mast design if possible, which would remove the requirement to relocate any equipment to the wheelhouse top. There is no communication equipment to be relocated.

b) Please refer to the following documents included in the solicitation amendment:

VNDB2 352-07 List of Cables Power System
VNDB2 353-10 Lighting System Deck Plan Forecastle Deck
VNDB2 1477-52801 Electrical System 4of6
VNDB2 1477-52801-01 Electrical System 3of6

Q28. At Item 11.3.17.4

- a) Would you please provide the following drawings referenced in Drawings 229-10 and 229-S-12:
- Dwg 229-S-5 Hinged weathertight door
 - Dwg 229-S-3 Fixed louvers
 - Dwg 229-S-13 Hinged weathertight door

b) Also, can you confirm if there is any insulation in the duct ventilation (adjacent to the bulkheads) above the bridge deck ?

A28. a) Please note the answer to Question 12 with regards to 229-S-3. Please see the drawings noted below in the solicitation amendment:

VNDB2 229-S-5 Special Hinged Weathertight Door
VNDB2 229-S-13 Hinged Weathertight Door

b) Please refer to the drawings noted below in the solicitation amendment for insulation arrangements:
VNDB2 240-05 Lining Arrgt Boat Deck 3of4
VNDB2 243-01 Insulation Arrgt & Details Profile 3of4
VNDB2 243-01 Insulation Arrgt & Details Upper Deck & Over 2of4

Q29. a) May we please ask for an updated excel file of the pricing data sheet?

b) Machinery Instrumentation 3.7 : Is there an instrumentation list available for the new installations? i.e. Pressure/Suction Gauges, thermometers, etc.

c) Spec. 11.3.17.11 : We would require the amount of ducting to be modified.

A29. a) The Pricing Data Sheet is being updated and will follow shortly.

b) Section 3.7 is the general requirements for instrumentation in the case that it needs replacing. The new installations reuse existing instrumentation, however, if it is damaged and the Contractor needs to replace components, these requirements must be followed.

c) Drawing 5546-574-001 indicates the required ducting to be modified with following notation on the drawing: (NEW) .

Q30. At Item 11.3.17.3 the contractor must rebuild engine room ventilation system according to drawing 5546-574-001. However, the thickness of the adjacent bulkheads is required to accurately quote material/price. (Structural drawing is important for these modifications.)
Can you provide that information?

A30. Please refer to the following drawings in the solicitation amendment:

VNDB2 112-26 Wheelhouse Floor Bridge Deck 1of1
VNDB2 112-27 Minor Bulkheads Under Bridge Deck Fan House
VNDB2 112-28 Wheelhouse Top Bulkheads Under

Q31. Due to the numerous subcontractors on this project and the coordination involved, could we be granted an extension so we may have time to review and collate these into our bid preparation?

A31. The bid closing date will be extended to January 7, 2020.

Q32. According to the Wartsila material list for exhaust system, steel is to be used for the items listed below. However the material from the list below is not available in steel;
It is available in Corten. Would you please confirm the material list is correct?

ELBOW 15 (5-17)	355.6 x 5.6 - M3D	steel	EN 10253-2 type A
ELBOW - LONG RADIUS 15 (5-17)	22" Sch 10	steel	ASME B16.9
ELBOW - LONG RADIUS 30 (18-32)	10" Sch 10	steel	ASME B16.9

ELBOW - LONG RADIUS 30 (18-32)	22" Sch 10	steel	ASME B16.9
ELBOW - LONG RADIUS 45 (33-47)	22" Sch 10	steel	ASME B16.9
SEGMENT WELDED ELBOW 45 (33-47)	559.0 x 5.0 R=838 mm	steel	DIN 86009
ELBOW - LONG RADIUS 60 (48-62)	14" Sch 10	steel	ASME B16.9
ELBOW - LONG RADIUS 60 (48-62)	22" Sch 10	steel	ASME B16.9
ELBOW - LONG RADIUS 90 (63-90)	10" Sch 10	steel	ASME B16.9
ELBOW - LONG RADIUS 90 (63-90)	14" Sch 10	steel	ASME B16.9
ELBOW - LONG RADIUS 90 (63-90)	22" Sch 10	steel	ASME B16.9

A32. The materials on the Material List are to be Corten Steel, as noted in the Material Specification block on drawing 5546-743-001.

Q33. Please confirm if training is included in allowance for all the FSRs?

A33. Yes.

Q34. At Section 11.3.16.1 Walkways Engine Room Floor level : At bidder's visit, it seems to be made of aluminum, are the new walkways fabricated of steel checker plate?

A34. The ship has been replacing the steel deck plates with aluminum. The Engine Room must be fitted with aluminum deck plates. Section 11.3.16.1 will be modified to read:

11.3.16.1 Due to the removed and new installed equipment, the Contractor must replace the existing deck plates with aluminum deck plates, underlying supports, gratings, hand rails, ladders and stairways as required. The Contractor must have the deck plates on one level above the tank top, maintain safe access to all areas of the new gensets, while leaving room for the gensets to move on the flexible vibration mounts. During installation of the deck plates around the PGSs, Contractor must consult with the on site Wartsila representative for acceptable distances to install deck and supports around the PGSs.

Q35. At Section 11, are the double regulat and comiss. valves GSM supply?

A35. No. Please cross reference both to the 5546-789-001 Piping Material List and the applicable system drawing, in this case 5546-722-001 FW Cooling System, where there is a list of components, some listed as Wartsila supply. Where Wartsila is noted as supply, those components will be GSM supply.

Q36. At Section 16.1.1.1, it says to install fog horn on the aft mast. This contradicts with 16.3.3.1 to install fog horn to new mast; please clarify.

A36. The reinstallation location of the fog horn would have been dependent on the Contractor's choice of mast design. With the Contractor's agreement at the Bidder's Conference that the Sir William Alexander's forward mast will be used as the baseline design, the foghorn will be mounted on the new forward mast.

Q37. In Annex J – Deliverables/Certifications - for the upcoming Cornwallis bid, can you please clarify what we are expected to submit for items 9b and 9c? Would a written letter stating that the yard has both the capacity for equipment with vessel side access and suitable crane capacity suffice for these items?

A37. Yes, a letter would suffice certifying and detailing the clearances showing the capability to accommodate the access points on both sides of the vessel to move the Propulsion Generator equipment and Cycloconverter equipment into the engine room and cycloconverter room respectively. As well a letter would suffice certifying and detailing the crane capacity is on hand required to complete all work in the specification.

3) Upload Additional Drawings and Documents

File name on Buyandsell.gc.ca: Addl Docs per Q&A 25-36

4) Modify Annex A

At 15.3.1.2

Delete: In its entirety

Insert:

15.3.1.2 Palfinger FSR must be on site to provide guidance and instruction on mounting and securing, electrical connections for Palfinger supplied electrical cabinets, and commissioning, as well as dock and sea trials. The Palfinger FSR must perform the final electrical connections to all the Palfinger Crane slip ring.

At 4.5.1.1

Delete: In its entirety

Insert:

4.5.1.1 The Contractor must conduct a short circuit current analysis and it must be maintained. The Contractor must update the short circuit analysis monthly and an electronic copy must be provided to the IA and the TA at monthly progress reviews or at each design change which has a significant impact on the electrical system. The analysis calculation must be in accordance with Transport Canada requirements.

At 11.3.16.1

Delete: In its entirety

Insert:

11.3.16.1 Due to the removed and new installed equipment, the Contractor must replace the existing deck plates with aluminum deck plates, underlying supports, gratings, hand rails, ladders and

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stairways as required. The Contractor must have the deck plates on one level above the tank top, maintain safe access to all areas of the new gensets, while leaving room for the gensets to move on the flexible vibration mounts. During installation of the deck plates around the PGSs, Contractor must consult with the on site Wartsila representative for acceptable distances to install deck and supports around the PGSs

At 43.0 EXTERNAL DECKS – PAINT
Delete: In its entirety

At 44.0 DECK ATTACHMENTS - PAINT
Delete: In its entirety

End of Solicitation Amendment #7