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**Bid Receiving Public Works and Government
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Pacific Region
401 - 1230 Government Street
Victoria, B.C.
V8W 3X4
Bid Fax: (250) 363-3344

**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
Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution
Public Works and Government Services Canada -
Pacific Region
401 - 1230 Government Street
Victoria, B. C.
V8W 3X4

Title - Sujet CCGS J.P. Tully - Sewage Plant	
Solicitation No. - N° de l'invitation F7049-160067/B	Amendment No. - N° modif. 001
Client Reference No. - N° de référence du client F7049-160067	Date 2016-11-22
GETS Reference No. - N° de référence de SEAG PW-\$XLV-176-7107	
File No. - N° de dossier XLV-6-39041 (176)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2016-12-19	
Time Zone Fuseau horaire Pacific Standard Time PST	
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: Godin, Andre	Buyer Id - Id de l'acheteur xlv176
Telephone No. - N° de téléphone (250) 363-3152 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
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 No: 1 is to promulgate:

- 1) Bidder questions and Canada responses.
- 2) Revision to Annex A- Statement of Requirement

Questions Number	Bidder Questions	Canada Response
1	Also the specification asks for epoxy coated tanks with externals painted in enamel. Would the customer accept non-corrosive Stainless Steel 316L as an alternative?	Answer 1; Canada will accept stainless steel tanks in place of epoxy coated steel.
2	<u>2.12 The system must be complete with all valves required for isolation and operation.</u> Our unit has all built on valves required for operation and isolation. But does this item requires that ship system valves such as overboard discharge storm valves, shut off valves in Grey water and Black water systems to be supplied as well?	Answer 2: The unit must be fitted with all valves that are required for the system to operate. All pipe connections and isolation valves to that supply the black and grey water to the system will be provided by others. All valves that isolate the sewage system from the ships supply systems (ie. Service air, fresh water etc.) will be provided by others.

<p>3</p>	<p><u>2.21 The system must be provided with an effluent quality monitor that meets the stated regulation. The unit can be remotely mounted in the discharge piping of the system and be provided with an Effluent measuring equipment Calibration certificate. The monitor is to be fed power from the control panel and alarm when it is in a fault condition. The monitor is to have contacts to allow it to be connected to the Techsol Alarm system.</u></p>	<p>Answer 3: The statement," 2.21 The system must be provided with an effluent quality monitor that meets the stated regulation. The unit can be remotely mounted in the discharge piping of the system and be provided with an Effluent measuring equipment Calibration certificate. The monitor is to be fed power from the control panel and alarm when it is in a fault</p>

	<p>There is no regulation that requires online monitoring. Half of the parameters (BOD, coliform) there is no instrument available to monitor these, they are laboratory tests. Also the instruments that are available for COD, pH are massive and very expensive. We have never seen this requirement, not even in the most stringent applications. Can you clarify what are required parameters to be monitored by "<u>an effluent quality monitor that meets the stated regulation</u>"?</p>	<p>condition. The monitor is to have contacts to allow it to be connected to the Techsol Alarm system. "Is to be removed and replaced by: The system is to be delivered with a : Marpol Annex IV Compliant test Kit</p> <p>The kit must allow and include:</p> <ul style="list-style-type: none"> - Full Suite of Tests to MEPC.159(55) Annex 26 - Simple Step by Step Procedures <p>The Kit must allow Tests to determine the following:</p> <ul style="list-style-type: none"> - BOD (probable) - Chemical Oxygen Demand (COD) - Chlorine - Coliform and E.coli - pH Value - Turbidity (Suspended Solids)
4		
5		

Solicitation No. - N° de l'invitation
F7049-160067/B
Client Ref. No. - N° de réf. du client
F7049-160067

Amd. No. - N° de la modif.
001
File No. - N° du dossier
XLV-6-39041

Buyer ID - Id de l'acheteur
xl1v176
CCC No./N° CCC - FMS No./N° VME

ANNEX A - STATEMENT OF REQUIREMENT

CCGS John P Tully Sewage Plant and Vacuum Collection System

Specification No: F7049-160067

Final
November 4th, 2016

Rev 1:
November 21, 2016

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

JP TULLY SEWAGE SYSTEM REPLACEMENT (FINAL OCT.06-2016)

STATEMENT OF REQUIREMENTS

1. SCOPE:

- 1.1 To supply and deliver (1) sewage plant suitable to process all black and grey water for 48 to 60 people. To supply and deliver (1) vacuum system to be connected to the toilet system and handle all black water.

1.2 REGULATORY REQUIREMENTS:

- 1.2.1 Must meet Annex A.1, item No.A.1/2.6 and Annex Module Bin the Dirrective.Marpol 73/78 as amended, Annex IV Regulation 9, IMO Res. MPEC 227(64) with the exemption of Section 4.2.
- 1.2.2 The system must be approved by a class society and be supplied with a Type Examination Certificate provided by the class society.
- 1.2.3 Canada shipping Act 2001 and relating regulations for vessel equipment - machinery
- 1.2.4 The classification societies must be an "approved classification societies "per the Transport Canada Marine Safety Marine Machinery Regulations SOR/90-264

2. TECHNICAL DESCRIPTION: SEWAGE SYSTEM

- 2.1 The certified flow rate is to be not less than 6000 liters /day (black and grey water) with a peak capacity of not less than 6150 Liters/day (for a period not exceeding 5 days). The sewage treatment plant will receive black water from 25 crew accommodation toilets. The sewage system will receive grey water from crew accommodation sinks and showers, 3 laundry washing machines, and galley waste water.
- 2.2 The deck space is limited and all components for the sewage system must fit in a foot print
- Length-3000mm
- Width- 2100mm
- Height-2000mm
- Note: The orientation of the sewage plant is restricted by the space available and the unit must operate correctly with the long axis being fore and aft.
- The sewage system must be complete as supplied and not require additional storage tanks for effluent or sludge.
- 2.3 The power required is 460volts/ 3phases/ 60 Hz. Complete with supplied transformers suitable for the controls.

- 2.4 The system is to be fitted in the engine room and must be able to operate at an ambient temperature range from 0 to 40 degrees Celsius ambient relative humidity <90%, vessel roll of 20 degrees and pitch of 10 degrees.
- 2.5 The sewage system must be fully automated and be able to run continuously.
- 2.6 The sewage system is to be all welded construction and all components are to be painted with marine epoxy paint systems. The interior of all tanks are to be coated with a corrosion resistant system with a minimum of 300 micron TDFT. The exterior components are to be coated with marine grade enamel with a minimum of 125 TDFT (this is to include all pumps motors and auxiliary components).
- 2.7 The sewage system must have a class approved finale sterilization process as per 1.2 to treat the effluent. The sterilization processing equipment must fit in the foot-print provided in 2.2. If a chlorine dosing system is to be used the system must also include a de-chlorination system.
- 2.8 The sewage system must include 1 duty and 1-standby discharge pump suitable for pumping sewage, fitted to unit with isolation valves and piping.
- 2.9 The sewage system must include 1 duty and one standby aeration blower fitted to unit with isolation valves and piping.
- 2.10 The sewage system must have the ability to macerate the effluent prior to entering the sewage treatment plant. Maceration can be completed by a separate pump if this process is not incorporated into the Duplex Vacuum pump system detailed in Section 3.0. Duplex Vacuum System.
- 2.11 The macerating pump must mix and macerate the incoming raw sewage; before it enters the treatment plant.
- 2.12 The pump must be capable of operating in auto or manual mode.
- 2.13 In the auto mode all pump functions are be controlled and the system must protect the pump from dry running when the pump is in auto mode.
- 2.14 The sewage system must include a fully enclose control panel IP 24 complete with all controls required for fully automated control of all functions required for the system to operate. The control panel is to be fitted with push button controls. The control panel must have system operation indication for power available, blower running, pump running, high level, overflow, sanitation system healthy and a common alarm for other functions(this is the minimum indication acceptable and additional indication is acceptable). A Control panel must also be provided for the vacuum system operation including a low vacuum alarm. It is acceptable to provide a separate control panel for the vacuum system and provide the vacuum system separate to the sewage treatment plant for mounting in remote location.
- 2.15 The control panel is to provide voltage free contacts for remote monitoring.
- 2.16 The control panel must be supplied with water tight glands for all penetrations and be supplied with anti-vibration mounts.

- 2.17 The system must be complete with all valves required for isolation and operation.
- 2.18 The system must be provided with a grease trap for installation in a separate location. There is no size limitation but the grease trap should be capable of managing the flow from three 2" galley sink drains.
- 2.19 All components and valves must be labeled and marked with permanent markings in English.
- 2.20 All specially designed tools required to work on the Sewage System are to be supplied.
- 2.21 **REV 1**

~~**DELETE:** The system must be provided with an effluent quality monitor that meets the stated regulation. The unit can be remotely mounted in the discharge piping of the system and be provided with an Effluent measuring equipment Calibration certificate. The monitor is to be fed power from the control panel and alarm when it is in a fault condition. The monitor is to have contacts to allow it to be connected to the Techsol Alarm system.~~

INSERT: The system is to be delivered with a:
Marpol Annex IV Compliant test Kit, The kit must allow and include:

- Full Suite of Tests to MEPC.159 (55) Annex 26
- Simple Step by Step Procedures

The Kit must allow Tests to determine the following:

- BOD (probable)
- Chemical Oxygen Demand (COD)
- Chlorine
- Coliform and E.coli
- pH Value
- Turbidity (Suspended Solids)

3.0 DUPLEX VACUUM SYSTEM

- 3.1 Supply and deliver (1) vacuum system to be connected to the toilet system and handle all black water from the ships toilets. The vacuum system is to operate on 460volts/ 3phases/ 60 Hz. And be complete with supplied transformers suitable for the controls. The control panel is to provide voltage free contacts for remote monitoring
- 3.2 The system must be a fully automatic vacuum system to connect to the 2" toilet collection piping. The vacuum system is to include all controls, all indication, all system protection and all valves required. The vacuum system is to operate on 460volts/ 3 phase/ 60 Hz and must have 1 duty vacuum generator and one standby unit. The capacity of each vacuum generator must be not less than:

Air Capacity -15,000 L/Hour

Liquid 5000 L/Hour

3.3 All components for the vacuum system are to be skid mounted including the control panel that is to be on resilient mounts. . The new vacuum system must fit into the following space:

1.65 m port-Starboard,

1.25 m forward to aft

2.0 m high

3.4 The control panel is to be fully enclosed and meet IP 24 and allow for lag and lead control to allow two pumps to run in the event that one pump cannot keep up to the vacuum demand. All components and mounting skid are to be painted as per the other exterior components of the sewage system. The vacuum system will be mounted remote to the sewage plant and is not required to fit in the foot-print noted in 2.2 .in section 2.0 Technical Description : Sewage System The pipe running from the vacuum collection system to the sewage system is 2 inch and approximately 90 feet long

3.5 All specially designed tools required to work on the Duplex Vacuum System are to be supplied.

4.1 DELIVERABLES: (applies to both the Sewage System and the Duplex Vacuum System)

4.1.1 One complete sewage system.

4.1.2 One complete duplex vacuum collection system.

4.1.3 Effluent measuring equipment Calibration certificate

4.1.4 Class Society type approval certificates.

4.1.5 Works test certificate.

4.1.6 Class society Type Examination Certificate

4.1.7 All specialty tools required for both the sewage system and the duplex vacuum system to maintain the units.

4.1.8 The Contractor must supply preliminary information for the installation including dimensional information and fitting by the January 10th, 2017. The information must be in pdf and emailed to the Technical Authority.

4.1.9 The Contractor must supply a final information package as outlined in 4.3 to be delivered with the sewage unit.

4.2 SPARES:

4.2.1 Lists of recommended spares for two years and recommended spares for 5 years for both the:

4.2.1.1 Sewage System

4.2.1.2 Duplex Vacuum System

4.2.2 All consumables required to start-up the sewage system and operate for 6 months at rated capacity; this is to include all chemicals for maintenance and in service sterilisation of the effluent.

4.2.3 One complete spare vacuum pump.

4.3 MANUALS:

4.3.1 Three sets of English hard copy manuals and one electronic copy. Copies of drawings are to be in most recent AutoCAD format or be included in the manual. Complete sets of manuals are required as listed for both the sewage plant and the duplex vacuum system.

- 4.3.1.1 Installation instructions
- 4.3.1.2 General Arrangement drawings.
- 4.3.1.3 Wiring and control General Arrangement drawings.
- 4.3.1.4 Electrical component schematics and part identification index.
- 4.3.1.5 Installation instructions
- 4.3.1.6 Operating instructions.
- 4.3.1.7 Maintenance instructions.
- 4.3.1.8 Fault finding instructions.
- 4.3.9.1.9 Spare parts and tool lists.

5. SHIPPING:

All components are to be packed in suitable shipping crates and be shipped to:

Institute of Ocean Sciences, Pat Bay

Victoria, British Columbia

Canada V8L 4B2

6. Training

The bid is to include one /eight hour day to do onsite training for three CG crew in Victoria BC. The training is to include all operational and maintenance aspects of the unit. The training will be completed with the sewage system fully operational installed on the ship. The bid is to include travel and accommodation costs.

Training will be completed at:
Institute of ocean science – Pat Bay
9860 West Saanich Road
Victoria BC