

## ***CCGS Ann Harvey Alongside Refit 2014.***

### **Bidders Conference Minutes.**

The Bidders Conference for CCGS Ann Harvey was convened at John Cabot Building, in St. John's, NL at 1:30 pm Monday June 02, 2014 with the following attendees:

Colleen Dalton	PWGSC	Supply Specialist	772-4931
Phillip Bingley	CCG	Project Officer	772-4146
Jeff Ivany	NewDock	Production	758-6805
Rick Giles	CCG	C/E	685-3914
Dennis Thorne	Heddle Marine	President	330-0840
George Penney	NewDock	Contracts Manager	758-6800
Brad Calder	Atlantic Flushing	Supervisor	902-499-0328

### **Invitation to Tender**

#### **Page One**

Closing date is **June 17, 2014.**

Bidders are to ensure page (1) is completed accurately.

#### **1.2 Summary**

*Commencement Date:*           **June 25, 2014**  
*Completion Date:*           **August 01, 2014**

No comments about the work package and time allotted for the refit.

#### **C6000C Limitation of Price:**

This clause is to ensure that additional work is not started unless the Contracting Authority approves it. This clause works in conjunction with the Procedures for design change or additional work found in section 7.26.

#### **C0711C Time Verification**

This clause can be used within the 1379 "design change or additional work" negotiations. The intent is to provide a mechanism to ensure work is not delayed as a result of difficult negotiations ( I.E hours for a job). Upon completion, time verification would ensure the crown are paying a fair and reasonable price while the contractor is getting paid what they are entitled to. This clause will not be used for renegotiation of 1379's. As per current procedure, a revision to a particular extra will be raised to address any scope of work change.

#### **PREAMBLE**

No issues

## **H-01 PRODUCTION CHART & SUBCONTRACTOR ALLOWANCES**

No issues.

## **H-02 DECK UNDERLAY AND COVERING REPAIRS**

3.2 \$2,000.00 allowance for materials only.

3.11 \$3,000.00 allowance for materials only.

## **H-03 WELDING REPAIRS/FABRICATION**

Contractor shall bid on NOT cleaning/certifying FO tanks for safe entry.

## **H-04 VENT TRUNKING REPAIR**

No issues.

## **H-05 STBD AND AFT SEARCHLIGHTS REPLACEMENT**

3.23 The allowance of \$1,500.00 is for the FSR commissioning only.

## **H-06 CABIN 609 AND 612 REFURBISHMENT**

Contractor shall return cabins 609 and 612 to original condition including alleyway access doors from both cabins. Temporary bulkhead paneling shall be removed in-way of aft cabin access door and be replaced with CG supplied door. Contractor is responsible for fitting of tracks and bulkhead panels to accommodate door.

## **H-07 WELL DECK DUNNAGE REPLACEMENT**

Contractor shall bid on NOT cleaning/certifying FO tank for entry.

## **H-08 WINDOW MODIFICATION AND BULKHEAD INSULATION RENEWAL**

See 72-310 sheet 9 as separate attachment.

## **H-09 PORT FRESH WATER TANK REPAIRS**

MSI drawing 2518-01-00 as separate attachment.

## **H-10 HELICOPTER HANGER REFURBISHMENT**

Contractor shall bid on removing hanger sections ashore for storage at CG base.

## **H-11 STBD HIAB SEACRANE QUINQUENNIAL**

3.14 The re-plating of the cylinder rod (if required) will be covered under the allowance for the FSR stated in 3.1.

The measurements for the hiab crane are: weight- 2250kg, height in folded position-2.8 meters, width in folded position-2.55 meters.

**H-12 MRT 3900 MIRANDA DAVIT, GRA LIFEBOAT & DAVIT and BARGE DAVIT**

New item added. Specification attached with the bidders conference minutes.

**E-01 NO. 2 BOILER SURVEY**

Replace with revised E-01 as attached to the bidders conference minutes.

Clarification for 3.8-The contractor shall dismount the boiler casing and supply all labour to renew insulation in location 19, 20 and 21 as per PDF "Clayton E-150 Part Number Breakdown" and PDF "Clayton E-150 Expanded View". Contractor shall have an allowance of \$1,000.00 for materials. Contractor is responsible for any staging/access required to renew insulation.

**E-02 PIPE RENEWALS AND REPAIRS**

Replace with revised E-02 as attached to the bidders conference minutes.

Remove bullet 3 from part 1: Scope and remove 3.2 from Technical Description of the revised E-02.

**L-1 AIR CIRCUIT BREAKER TESTING**

No issues.

Pricing Data Sheet  
CCGS Ann Harvey 2014

ITEM	DESCRIPTION	PRICING (Including Allowances)
H-01	Production Chart & Subcontractor Allowances	\$
H-02	Deck Underlay and Covering Repairs 3.2 Allowance for insulation 3.11 Allowance for tiles 3.11 Allowance for vinyl flooring	\$ \$2,000.00 \$1,000.00 \$2,000.00
H-03	Welding Repairs/Fabrication	\$
H-04	Vent Trunking Repair	\$
H-05	Stbd and Aft Searchlights Replacement 3.23 Allowance for manufacturer REP	\$ \$1,500.00
H-06	Cabin 609 and 612 Refurbishment 3.4 Allowance for vinyl flooring	\$ \$1,500.00
H-07	Well Deck Dunnage Replacement	\$
H-08	Windows Modification & Bulkhead Insulation Renewal 3.4 Allowance for sealing material 3.5 Allowance for fabrication of window boxes	\$ \$500.00 \$2,000.00
H-09	Port Fresh Water Tank Repairs 3.1 Allowance for MSI to oversee repairs 3.4 Unit cost per m <sup>2</sup> for tank work \$ _____	\$ \$2,000.00
H-10	Helicopter Hanger Refurbishment 3.1 Allowance for FSR 3.3 Allowance for any additional parts	\$ \$40,000.00 \$2,000.00
H-11	Stbd Hiab Seacrane Quinquennial 3.6 Unit cost for transporting crane (if required) 3.1 Allowance for FSR 3.22 Allowance for NDT testing 3.29 Allowance for fasteners	\$ \$ \$20,000.00 \$2,500.00 \$500.00
H-12	Miranda Davit, Lifeboat & Davit and Barge Davit 3.1.1 Allowance for FSR	\$ \$30,000.00
E-1	No 2 Boiler Survey 3.4 Allowance for replacement fittings 3.8 Allowance for materials 3.12 Allowance for repairs to refractory cement	\$ \$1,500.00 \$1,000.00 \$5,000.00
E-2	Piping Renewals & Repairs	\$
L-01	Air Circuit Breaker Testing 3.1 Allowance for FSR	\$ \$20,000.00
	<b>Total Bid Price (including allowances)</b>	<b>\$</b>

Item #: H-12	SPECIFICATION	TCMS Field #: N/A
<b>Quintennial Inspections- MRT 3900 Miranda Davit, GRA Lifeboat and Davit and Barge Davit</b>		

**Part 1: Scope:**

- 1.1 The intent of this specification shall be for the contractor to supply the services of a Harding Safety Representative to carry out Quintennial inspection on the vessel's Miranda Davit, Lifeboat and Lifeboat Davit and Barge Davit in accordance with Harding Safety procedures and checklists.

**Part 2: References:**

**Harding Safety**

Contact information for the FSR: Colin Edwards, Manager, Colin Edwards - Harding( [colin.edwards@harding.no](mailto:colin.edwards@harding.no) )  
Ph: (604) 530 0814 Fax: (604) 530 0812

**2.2 Owner Furnished Equipment**

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

**Part 3: Technical Description:**

**3.1 General**

- 3.1.1. The contractor shall include in his quote \$30,000.00 for the services of the FSR. This allowance encompasses FSR services for all inspections. The Contractor shall allow for 2 milrights for 160 hours to assist the Harding Safety FSR and complete work as indicated in SOW and as directed by FSR. Note: Any machining required or NDT testing will be addressed by 1379 action.
- 3.1.2. FSR shall complete preliminary inspection of key components as quickly as possible to identify critical path, and possible purchase of long-lead items.
- 3.1.3. Contractor shall lockout the equipment prior to commencement of work as per vessel Lockout/Tagout procedures. Vessels C/E and E/O shall direct contractor to location of lockouts.
- 3.1.4. CG will be responsible for removing lifeboat, barge and FRC ashore and their suitable stowage at the CG base.

Item #: H-12	SPECIFICATION	TCMS Field #: N/A
<b>Quintennial Inspections- MRT 3900 Miranda Davit, GRA Lifeboat and Barge Davit</b>		

**3.1.5. Davit inspections shall include but not be limited to the following:**

- Inspection and confirm operation of all limit switches emergency stop. Check operation of control devices.
- Inspection of the davits includes the opening and inspection of the Winch gear box, check gears, brake, clutch & operation of crank handles.
- Inspection of the davits and ancillary equipment.
- Inspection of the wire rope sheaves, pins and lower blocks.
- Lubrication of the davit grease nipples.
- Verify oil level and type.
- Visual inspection of the davit steelwork and suspension gear.
- check operation of the davit
- Empty boat dynamic lowering test
- Check power units / hand pumps / hoses/ function hyd cylinders / turning out in stored / hand pump & normal power mode.

**3.1.6. FSR shall complete internal and external inspection of lifeboat to ascertain condition including but not limited to:**

- Visual inspection of external / internal condition of the lifeboat.
- Check steering.
- Check starting and all gauges.
- Check offload release hooks, foundations and linkages.
- Check rations and loose equipment.
- Check all fluids and filters
- Check batteries, Internal lighting, Control systems.
- Check the release hook and record tolerances if applicable.
- Check doors / hatches and seals, check loose equipment/ sump pumps etc..
- Check exhaust and lagging (also check during extended running period in water for any obvious CO2 leakage from engine.

**3.1.7. Contractor shall supply scaffolding to access rollers and axels for change-out as directed by FSR for all davits. Contractor shall also include in their bid the services of a crane for 12 hrs as required to complete work scope as directed by FSR.**

**3.1.8. Contractor shall drain oil from winch gear cases and remove gear case covers. Contractor shall prove the gear case vents are free. Contractor shall inspect the gear cases for wear and damage. Contractor shall measure and record all backlash with respect to gearing.**

Item #: H-12	SPECIFICATION	TCMS Field #: N/A
<b>Quintennial Inspection- MRT 3900 Miranda Davit, GRA Lifeboat and Barge Davit</b>		

- 3.1.9. The contractor shall flush the gear cases and refill crank case to the correct operating level with ship supplied oil. Contractor shall install and secure the gear case covers with correct cover seal.
- 3.1.10. Contractor shall dismantle the winch brakes assemblies for component wear inspection. This will include dismounting the brake and centrifugal assembly from its shaft. Brake linings and centrifugal brake pads to be inspected for wear and damage. Brake lining retaining screws shall be inspected. Centrifugal brake springs shall be inspected for wear and damage. Wear measurements of the brake linings shall be recorded and compared to manufactures specifications, if measurements are below specifications Contractor shall renew brake linings.
- 3.1.11. Contractor shall clean all parts including any brake dust from brake housing and de-glaze the brake running surface.
- 3.1.12. Contractor shall re-assemble brake and centrifugal assemblies. After re-assembly the brakes shall be adjusted to correct setting.
- 3.1.13. Contractor shall prove grease fittings, grease channels and holes are clear.
- 3.1.14. Remove sheaves and inspect pins, sheaves and bushings as directed by FSR.
- 3.1.15. Contractor's FSR shall inspect for damage and wear all davit mounting hardware, davit arms, falls, falls wires, turnbuckles, shackles and foundation.

### **3.2 Location**

- 3.2.1 The Miranda Davit is located on the port side.
- 3.2.2 The Lifeboat/Davit and Barge Davit is located on the starboard side.

### **3.3 Interferences**

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

## **Part 4: Proof of Performance**

### **4.1 Inspection**

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

Item #: H-12	SPECIFICATION	TCMS Field #: N/A
<b>Quintennial Inspections- MRT 3900 Miranda Davit, GRA Lifeboat and Barge Davit</b>		

#### **4.2 Testing**

**4.2.1.** Davits are to be functionally tested in accordance with Harding procedures and checklists. Contractor with the vessel's crew in attendance shall carry out an operational test on FRC, lifeboat davit and barge davit to prove the correct operation of the davit, winch, brakes, sheaves, limit switches and hydrostatic release mechanism. Contractor shall supply load cell and water bags for 1.1 load tests of davits.

**4.2.2.** After all tests and trials are proven satisfactory, the Contractor with the vessel's crew shall conduct a launch of each boat for the TCMS attending surveyor.

#### **4.3 Certification**

**4.3.1.** Instruments or accessories required to perform testing of davits shall be certified and calibrated (i.e. loads cell or stones used to test davit structure)

#### **Part 5: Deliverables:**

##### **5.1 Drawings/Reports**

**5.1.1** The contractor shall arrange for the Harding FSR to provide three typewritten reports detailing the inspections and his findings to the Chief Engineer for Lifeboat/Davit, Miranda Davit and Barge Davit.

##### **5.2 Spares**

##### **5.3 Training**

##### **5.4 Manuals**

<b>Spec Item #: E-1</b>	<b>SPECIFICATION</b>	<b>TCMSB Field #</b>
<b>No 2 Boiler Survey</b>		

### **Part 1: Scope**

- 1.1 The intent of this item shall be to open up the starboard boiler for cleaning, inspection and testing and to obtain a credit from the Transport Canada Marine Safety Inspection Board.

### **Part 2: References**

#### **Starboard Boiler – Located Engine Room Flat**

Clayton Steam Generator

Model EO-100, Serial # 21956

Working Pressure – 100 PSI

Test Pressure - 125 PSI

Safety Valve – 1 1/4", 125 PSI

### **Part 3: Technical Description**

- 3.1 The contractor shall with the Senior Engineer lock out the boiler as required. The Contractor shall use their own locks/tags and the lock-outs shall be entered in the Ship's Lock-out/Tag-Out Register.
- 3.2 The contractor shall remove or disconnect all wiring, piping, sensors, brackets, pressure gauges, and other associated hardware and appliances to carry out the specified work. All items shall be reassembled and reconnected in good order upon completion of all testing, cleaning, and inspections.
- 3.3 Mountings on both boilers shall be tagged prior to removal for identification purposes and installed back in their respective original locations upon completion of all work.
- 3.4 The contractor shall supply the replacement fittings 2" nom and under as accepted by the C/E for direct replacement. Contractor shall have an allowance of \$1500 to be adjusted up or down via 1379 action.

<u>Item</u>	<u>Location and Size</u>
Safety Relief Valve	1 ¼ inch starboard
Separator Drain Valve	¾ inch angle globe
Burner Control Valve	¼ inch
Feed Water Pump Inlet Valve	2 inch gate
Feed Water Check Valve	2 inch angle check
Feed Water Pump Relief Valve	2 inch angle
Coil Feed Valve	2 inch globe

Spec Item #: E-1	<b>SPECIFICATION</b>	TCMSB Field # 3KK180-02
<b>No. 2 Boiler Survey</b>		

Coil Drain Valve	2 inch globe
Steam Trap Discharge Valve	1 inch globe
Soot Blowing Valve	1 ¼ Inch port, 1 inch starboard

- 3.6 The contractor shall remove the following valves for overhaul by a qualified shop.
- |                 |                    |
|-----------------|--------------------|
| Main Stop Valve | 2 ½ inch starboard |
|-----------------|--------------------|

The valve shall be dismounted and replaced by Owner-supplied valve using new steam flange gaskets supplied by Contractor. All material shall be suitable for use with steam and rated for a minimum of 150 psi operating pressure. <sup>Amendment</sup>

~~The valve shall be disassembled and thoroughly clean all parts for inspection. The metal seat shall be lapped and if the valve is not repairable or considered not cost effective to repair, shall be replaced with new valves, owner supply. Valve gland shall be repacked with new packing and all disturbed gaskets shall be replaced with new gaskets supplied by Contractor. All material shall be suitable for use with steam and rated for a minimum of 150 psi operating pressure.~~

- 3.7 Contractor shall remove the burner. They are secured via wing nuts. The fuel inlet and return lines will need to be let go.

- 3.8 ~~The contractor shall dismount the boiler casing and supply all labour to renew insulation in locations 19, 20 and 21 as per PDF 'Clayton E-150 Part Number Breakdown' and PDF 'Clayton E-150 Expanded View'. Contractor shall have an allowance of \$1000 for materials. Contractor is responsible for any staging/access required to renew insulation.~~ <sup>Bidders Conference</sup> ~~The Contractor shall dismount the boiler casing and supply all labour and materials to renew the insulation and refractory. Contractor shall have an allowance of \$1000 for materials.~~ <sup>Amendment</sup>

- 3.9 The contractor shall thoroughly clean by wire brushing and fresh water flushing the external surfaces of the boiler coil. The internals of the boiler coil shall be thoroughly cleaned with an approved chemical for removing scale. Upon completion of chemical cleaning, the coil internals are then to be thoroughly washed out and neutralized with a suitable alkaline agent followed by a flushing. All cleaning chemicals and fluids used for cleaning and descaling shall be contained and disposed of ashore by the contractor in a manner in keeping with local environmental recommendations. Contractor shall ensure catchall under boilers is plugged to contain all contamination from cleaning. Current MSDS sheets are to be provided to the Chief Engineer before the chemicals are used. The Contractor shall

<b>Spec item #: E-1</b>	<b>SPECIFICATION</b>	<b>TCMSB Field #</b>
<b>No. 2 Boiler Survey</b>		

quote on the removal of 500 gallons of water and residue from the internal and external cleaning of the boiler coil.

- 3.10 Following the cleaning procedures, the boiler coil and the associated steam separator shall be hydrostatically tested at 1.5 times the working pressure. The contractor shall provide all the equipment including blank flanges, valves, gaskets, fittings, pressure gauges, pumps, etc. necessary to perform the hydrostatic test. Provide proof of gauge and pressure relief valve calibration to the C/E before the test.
- 3.11 Testing shall be witnessed by the Marine Safety Inspector and shall be to a pressure and duration to the Inspector's satisfaction. Contractor shall arrange for TCMSB and shall notify Chief Engineer prior to TCMSB attendance.
- 3.12 The combustion chamber shall be thoroughly cleaned. The refractory cement shall be inspected for cracks. Contractor shall quote \$ 5000.00 for repairs to the refractory cement. Final cost shall be adjusted up or down by 1379 action upon proof of invoice. Owners shall supply plastic refractory cement.
- 3.13 The contractor shall remove the combustion air duct and damper assembly from each boiler. Air duct and damper components shall be completely disassembled. All parts shall be cleaned and laid out for inspection by Chief Engineer. Upon completion of inspection, the damper unit and ducting shall be reassembled as per the manufacturer's specifications section 8.12 of the manufacturer's instruction manual which is located onboard the vessel and will be provided to the successful bidder.
- 3.14 The contractor shall remove the safety valve and have it sent ashore to a recognized test facility to have it set and tested. An original test certificate is to be provided to the Chief Engineer and Transport Canada Surveyor upon completion of this test.
- 3.15 Following the completion of the specified work, the boiler shall be suitably drained. All blanks, plugs, gaskets, etc. necessary for testing shall be removed. All piping, fittings, valves, brackets, burner etc. and all items disturbed to perform the cleaning and inspections shall be reconnected in good order. All new gaskets shall be supplied and installed by the contractor in place of gaskets and seals that were disturbed to perform this work. All alarms and controls shall be reconnected and proven operational. This shall be done with the assistance of the Electrical Officer.
- 3.16 All materials, equipment, chemicals, cleaners, etc. shall be supplied by the contractor to perform the cleaning and testing of both boilers. Current MSDS sheets shall be provided to the Chief Engineer for any and all chemicals used before the chemicals are brought aboard the vessel.

<b>Spec Item #: E-1</b>	<b>SPECIFICATION</b>	<b>TCMSB Field #</b>
<b>No. 2 Boiler Survey</b>		

**Part 4: Proof of Performance**

- 4.1 Correct boiler operation shall be demonstrated and the contractor shall set the safety valves to lift at the pressure indicated by the attending Marine Safety Inspector and then tested for correct lift pressure.

**Part 5: Deliverables**

- 5.1 Contractor shall provide 3 typewritten service reports of the work carried out.

Spec item #: E-02	<b>SPECIFICATION</b>	TCMSB Field # N/A
<b>Piping Renewals &amp; Repairs</b>		

### Part 1: SCOPE

1.1 The intent of this specification is to remove, fabricate new and replace as specified, the following sections of piping.

- Steel – stbd sea bay vent line – 6” pipe with flanged couplings
- Steel – port sea vent line – 6” flanged one end grooved other<sup>Amendment</sup>
- Steel – stern tube sea water pump discharge line – 2 1/2” socket weld and flanges – 3 leaks in this section of piping shall be repaired.
- Steel – steam supply line flanged both ends to modify<sup>Amendment</sup>

### Part 2: REFERENCES

#### Standards

2.1 The following Coast Guard Standards and or Technical Bulletins must be adhered to in the course of executing this specification. Copies of these standards and bulletins can be obtained from the CCG Technical Authority.

- Canadian Coast Guard Fleet Safety Manual (DFO 5737)

#### Owner Furnished Equipment

2.2 The Contractor shall supply all materials, consumables and equipment required to perform the specified work.

### Part 3: TECHNICAL DESCRIPTION

- 3.1 Contractor, with ship's Senior Engineer, shall lockout/tag-out the affected systems when the Contractor is ready to start the related work. The lock-outs shall be entered in the Ship's Lock-out/Tag-Out Register and the affected piping isolated and drained as appropriate.
- 3.2 Located in Propulsion Motor Room, port side, Contractor shall remove the corroded section of piping on the Stern Tube discharge line from the flanged discharge valves on the pump outlets to the, socket weld, union aft of the inline strainer, approx 15 feet of scheduled 80 2-½ inch steel piping. Contractor shall fabricate replacement piping as per piping removed and install as per original along with new gaskets.



Spec item #: E-02	<b>SPECIFICATION</b>	TCMSB Field # N/A
<b>Piping Renewals &amp; Repairs</b>		

- 3.3 Located in the Main Engine Room, Stbd side fwd, Contractor shall remove a section of 6 inch piping on the Stbd Sea Bay vent line, approximately 10 feet long. Before starting this work the Senior Engineer will verify the Contractor has closed and locked the stbd vent valves for the sea bay, upper sea chest and lower sea chest before starting this work. Before removing bolts from the flange the Contractor, with Senior Engineer, shall ensure that the valves are holding. The piping is flanged at both ends with 8 -3/4 inch bolt holes. Contractor shall crop out the 45 degree schedule 80 elbow at the top section of the pipe and weld in a new elbow. Internal of new 45 degree elbow shall be coated with a ceramic coating.



3.3 Stbd fwd Tanktop



3.4 MCR port – view elongated<sup>Amendment</sup>

- 3.4 Located in the MCR fwd section outboard of dismountable bulkhead panel; Contractor shall close, lockout, tagout and log the lockout of the Port seabay and upper and lower sea chest vent valves then dismount the lower victaulic 90 elbow and the adjoining flanged pipe section and transport dismounted sections to clean work area for inspection. The flanged pipe section shall be cleaned internally and on flange face and inspected for wastage. A micrometer shall be used to measure and record the wall thickness of the pipe at the top groove at 4 positions on diameter. Contractor shall clean internally the short straight section of mounted pipe and measure and record the wall thickness at 4 positions of the victaulic clamp groove exposed in the dismounting of the victaulic 90 elbow. Contractor shall include in his bid for this item separately both cost A) in the event that the wall thickness in way of the top groove on the flanged pipe is greater than 0.275" the contractor shall grit blast clean all the internal surfaces of the flanged pipe section and then coat all the internal surfaces of the pipe secto with Owner-supplied Belzona 1321 applied as per Manufacturer's instructions. And separately cost B) Contractor shall fabricate an flanged with elbow to grooved end pipe section as original and then blast clean internally the new pipe section and

Spec Item #: E-02	<b>SPECIFICATION</b>	TCMSB Field # N/A
<b>Piping Renewals &amp; Repairs</b>		

3.4 continued:

coat all internal surfaces with Owner-supplied Belzona 1321 applied as per manufacturer's directions.

New or refurbished flanged pipe section shall be re-installed when new coating cured  
Using new Contractor supplied flange gasket and Owner-supplied victaulic 90 elbow c/w flex clamps and gaskets.

Contractor shall dismount the port breezeway mounted seabay vent outlet pipe and fill the vent pipe to the breezeway deck level to check for leaks of the new and disturbed piping section. When proven leak free or to drain for repairs the port side sea bay and sea chest vent isolation valves are to be unlocked and restored to normal condition. <sup>Amendment</sup>

- 3.5 Steam supply pipe section located in the Boat Deck Port FM200 Room deckhead head area shall be dismounted between the two after flanges: 3" nominal pipe length 20" + 30" + 9 inches between flanges and 45 degree elbows. The pipe shall be modified by cropping the appropriate length to insert a Contractor supplied flex section in extension. The modified pipe section shall be hydrostatically tested to be leak-free at 6 Bar pressure. All flange faces to be thoroughly cleaned of gasket residue and modified pipe to be re-installed and new thermal installation applied as original. Contractor shall fabricate and install a pipe support bracket from the deckhead; note that this will require cutting away of deckhead sheathing and insulation. <sup>Amendment</sup>



- 3.6 All piping modified or renewed in this specification E-02 shall be installed using new gaskets, nuts, bolts and washers. The steam piping gaskets shall be made of sheet packing rated for steam use. <sup>Amendment</sup>

Spec item #: E-02	<b>SPECIFICATION</b>	TCMSB Field # N/A
<b>Piping Renewals &amp; Repairs</b>		

- 3.7 Contractor responsible for the removal of any brackets, deck plating, etc. to facilitate this work.
- 3.8 Contractor responsible to replace all brackets, deck plating, etc. to original condition as found before work commenced.
- 3.9 Contractor shall be responsible for the removal and disposal of waste material ashore associated with this spec.
- 3.10 After completion the piping shall be tested for leaks.
- 3.11 All new and disturbed metal shall receive two coats of primer and one topcoat of Amercoat 5450.

#### **Part 4: PROOF OF PERFORMANCE**

##### **Inspection, Testing & Certification**

- 4.1 The Contractor with the Senior Engineer's assistance shall remove the lock-outs and pipe repairs tested for leaks.
- 4.2 All work shall be completed to the satisfaction of the Chief Engineer of his delegate.

#### **Part 5: Deliverables**

**Reports, Drawings, Manuals, Spares & Training**  
N/A