



USCGC IDA LEWIS (WLM 551)  
SPECIFICATION FOR DOCKSIDE REPAIRS  
FY2023

Developed By: Mark A Schmalstieg

(Rev-1, 14 December 2022)

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## REVISIONS RECORD

This page is used to record specification revisions, which may have occurred subsequent to a Revision 0 (Rev-0) package. Information listed is intended to provide contractors and field unit personnel a means to ensure all the current specification revision pages are present when reviewing or utilizing this specification package.

DATE	REV#	WORK ITEM#	CHANGES MADE
12/14/2022	1	33	Added WI 33 (Auxiliary Seawater System Piping, Renew
12/14/2022	1	34	Added WI 34 (Mechanical Remote Valve Operators, Renew

**NOTE :** All work item and paragraph numbers listed above for a given revision correspond to same numbers in the previous revision. This revised specification is self-contained with all of the above listed changes incorporated.

## CONSOLIDATED LIST OF REFERENCES

The below-listed documents form a part of this specification to the extent specified herein. Approval/publication dates or revision dates/numbers are also identified, to ensure that same document versions are used at the time of specification writing and during contract execution.

All Coast guard drawings, technical publications, and standard specifications will be provided to contractors by the Coast Guard at an appropriate time, or upon request, free of charge. Other Government documents may be accessed – free of charge – from links located on the SFLC website. Commercial sites provide access to their respective documents.

### COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 167-001, Rev L, Structural Closures  
Coast Guard Drawing 175 WLM 259-001, Rev A, Combustion Exhaust Diagram  
Coast Guard Drawing 175 WLM 259-005, Rev C, Combustion Exhaust A&D, Hull Block 970  
Coast Guard Drawing 175 WLM 505-002, Rev F, Mech Remote Valve Oprs A & D  
Coast Guard Drawing 175 WLM 506-001, Rev G, Overflows, Air Escapes & Sounding Tubes Diagram  
Coast Guard Drawing 175 WLM 508-002, Rev A, Combustion Exhaust Pipe Insulation  
Coast Guard Drawing 175 WLM 512-001, Rev E, HVAC Diagram  
Coast Guard Drawing 175 WLM 533-001, Rev G, Potable Water System Diagram  
Coast Guard Drawing 175 WLM 533-001, Rev H, Potable Water System Diagram  
Coast Guard Drawing 175 WLM 533-003, Rev G, Potable Water System A/D Hull Block 910, 920, 930, 940, 950  
Coast Guard Drawing 175 WLM 533-006, Rev D, Independent Tank Potable Water Hb 950  
Coast Guard Drawing 175 WLM 551-001, Rev J, Compressed Air System Diagram  
Coast Guard Drawing 175 WLM 593-001, Rev G, Sewage & Waste Water System Diagram  
Coast Guard Drawing 175 WLM 593-001, Rev G, Sewage and Waste Water System Diagram  
Coast Guard Drawing 175 WLM 593-009, Rev E, Independent Tanks, Sewage Holding Tank  
Coast Guard Drawing 175 WLM 601-002, Rev H, Booklet of General Drawings (IDA LEWIS)  
Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Drawings (552-564)  
Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Plans  
Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Plans  
Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet Of General Plans  
Coast Guard Drawing 175 WLM 633-001, Rev D, Cathodic Protection  
Coast Guard Drawing 175 WLM-528-001, Rev E, Plumbing and Interior Deck Drains Diagram  
Coast Guard Drawing 175-WLM 505-1, Rev C, General Requirements for Piping Systems  
Coast Guard Drawing 175-WLM 528-2, Rev H, Weather Deck Drains Diagram  
Coast Guard Drawing 175-WLM 556-1, Rev L, Hydraulic System Diagram  
Coast Guard Drawing 175-WLM 573-50, Rev A, Hydraulic Piping Installation for Chain Stopper  
Coast Guard Drawing 175-WLM 593-1, Rev G, Sewage & Waste Water System Diagram

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Coast Guard Drawing 175-WLM 593-10, Rev -, Sewage/Waste Water System Shore Tie Deck Connection Mods

Coast Guard Drawing 175-WLM 202-1, Rev J, MPCMS Cabling Diagram

Coast Guard Drawing 175-WLM 202-2, Rev F, MPCMS Cabling Diagram COED

Coast Guard Drawing 175-WLM 202-6, Rev B, MPCMS Wiring Modifications to Main & Secondary Consoles (551-559)

Coast Guard Drawing 175-WLM 202-7, Rev C, MPCMS Wiring Data Modifications to Consoles (COED), Hulls 551-559

Coast Guard Drawing 175-WLM 256-001, Rev J, Seawater Cooling System Diagram

Coast Guard Drawing 175-WLM 256-003, Rev D, Seawater Cooling System Frame 61 FWD, Blocks 910, 920, & 930

Coast Guard Drawing 175-WLM 256-004, Rev J, Seawater Cooling System A&D, Hull Blocks 940-970

Coast Guard Drawing 175-WLM 256-012, Rev B, ASW System Piping Modifications

Coast Guard Drawing 175-WLM 601-003, Rev N, Booklet of General Plans

Coast Guard Drawing 175-WLM-167-001, Rev L, Structural Closures

Coast Guard Drawing 175-WLM-202-201, Rev Q, MPCMS

Coast Guard Drawing 175-WLM-320-001, Rev AP, Electrical One-Line Diagram

Coast Guard Drawing 175-WLM-437-007, Rev R, Buoy Dk Control Sys Block, ISO & Elem Wrg Diag

Coast Guard Drawing 175-WLM-573-013, Rev -, Replacement DCV Amplifier Card Wiring Diagram

Coast Guard Drawing 175-WLM-601-001, Rev T, General Arrangement Inboard and Outboard Profiles

Coast Guard Drawing 225B-WLB 202-1, Rev G, MPCMS Cabling Diagram

Coast Guard Drawing 225B-WLB 202-2, Rev D, MPCMS Connection Table

Coast Guard Drawing 225-WLB 202-1, Rev F, MPCMS Cabling Diagram

Coast Guard Drawing 225-WLB 202-2, Rev G, MPCMS COED

Coast Guard Drawing FL 533-001, Rev B, Point of Use Potable Water Flush

Coast Guard Drawing FL 533-002, Rev A, Point of Use Water Filter Install

NAVSEA Drawing 804-5959214, Rev -, Piping Insulation-Installation Details

### **COAST GUARD PUBLICATIONS**

CGTO PG-85-00-230-S, August 2013, Planned Maintenance System Development Process Guide

Coast Guard Commandant Instruction (COMDTINST) 9077.1 (series), Equipment Lockout/Tags-Plus Instruction

Coast Guard Commandant Instruction (COMDTINST) M10360.3, Jun 2006, Coatings and Colors Manual

Coast Guard Maintenance Procedure Card (MPC) A-A-14033, Dec 2017, Buoy Chain Winch Wire Rope Weight

Coast Guard Technical Publication (TP) 10502 Machinery Plant Control & Monitoring System Operating Manual (MPCMSOM)

Coast Guard Technical Publication (TP) 3498, SWBS 573, Aug 2019, Buoy Chain Winch

Coast Guard Technical Publication (TP) 3505 A & B Machinery Plant Control & Monitoring System Operating Manual (MPCMSOM)

Coast Guard Technical Publication (TP) 3507 MPCMS Computer System Operating Manual (CSOM)

Coast Guard Technical Publication (TP) 3508 MPCMS Computer System Diagnostic Manual (CSDM)

Coast Guard Technical Publication (TP) 3509 MPCMS Software User's Manual (SUM)

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Coast Guard Technical Publication (TP) 3585 A& B Machinery Plant Control & Monitoring System Operating Manual (MPCMSOM)

Coast Guard Technical Publication (TP) 3589 MPCMS Computer System Manual

Coast Guard Technical Publication (TP) 3605 A & B Machinery Plant Control & Monitoring System Operating Manual (MPCMSOM)

Coast Guard Technical Publication (TP) 3607 MPCMS Computer System Operating Manual (CSOM)

Coast Guard Technical Publication (TP) 3608 MPCMS Computer System Diagnostic Manual (CSDM)

Coast Guard Technical Publication (TP) 3630, SWBS 573, Nov 2022, Buoy Crane - Model SB230-42 - Operation, Maintenance and Repair Instructions

Coast Guard Technical Publication (TP) 3932 MPCMS Data Logging System

COMDTINST M9085.1, Rev C, Naval Engineering Computer Aided Design Standards

Fire Prevention and Response

SFLC Technical Standard 086, June 2013, Technical Publications (TP)

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), Latest Version, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), Latest Version, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 0850 (SFLC Std Spec 0850), 2020, General Requirements for Drawing Preparation

Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2020, Shipboard Electrical Cable Test

Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2020, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

Surface Forces Logistics Center Standard Specification 5100 (SFLC Std Spec 5100), 2020, Clean Shipboard Ventilation Systems

Surface Forces Logistics Center Standard Specification 5550 (SFLC Std Spec 5550), Latest Version,

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020 Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Preserve Ship Structures

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), Latest Version, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 6341 (SFLC Std Spec 6341), 2020, Install Interior Deck Covering Systems

Surface Forces Logistics Center Standard Specification 8635 (SFLC Std Spec 8635), 2020, Temporary Services

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2020, Temporary Hull Accesses

## OTHER REFERENCES

- American National Standards Institute/American Water Works Association (ANSI/AWWA) C652, 2002, Disinfection of Water-Storage Facilities
- American National Standards Institute/American Water Works Association (ANSI/AWWA) C652, 2011, Disinfection of Water-Storage Facilities
- American National Standards Institute/American Water Works Association (ANSI/AWWA) C652, 2019, Disinfection of Water-Storage Facilities
- American National Standards Institute/NSF International (ANSI/NSF) 61, 2008, Drinking Water System Components - Health Effects
- American National Standards Institute/NSF International (ANSI/NSF) 61, 2015, Drinking Water System Components - Health Effects
- American Society for Testing and Materials (ASTM) International F1508, 2016, Standard Specification for Angle Style, Pressure Relief Valves for Steam, Gas, and Liquid Services
- American Society of Mechanical Engineers (ASME) B16.34, 2004, Valves-Flanged, Threaded, and Welding End
- American Society of Mechanical Engineers (ASME) B16.34, 2017, Valves-Flanged, Threaded, and Welding End
- ASTM International (ASTM) D1330, 2010 Standard Specification for Rubber Sheet Gaskets
- ASTM International (ASTM) D1330, 2010, Standard Specification for Rubber Sheet Gaskets
- ASTM International (ASTM) D1330, 2015, Standard Specification for Rubber Sheet Gaskets
- ASTM International (ASTM) F683, 2014, Standard Practice for Selection and Application of Thermal Insulation for Piping and Machinery
- ASTM International (ASTM) F992, 2006, Standard Specification for Valve Label Plates
- ASTM International (ASTM) F992, 2017, Standard Specification for Valve Label Plates
- Code of Federal Regulations (CFR) Title 29, Part 1915, 2014, Occupational Safety and Health Standards for Shipyard Employment
- Code of Federal Regulations (CFR) Title 29, Part 1915, 2022, Occupational Safety and Health Standards for Shipyard Employment
- Code of Federal Regulations (CFR) Title 29, Part 1915, Occupational Safety and Health Standards for Shipyard Employment
- Commercial Item Description (CID) A-A-59316, 2003, Abrasive Materials for Blasting
- Compartment Check Off List: WLM 175 – 551 (IDA LEWIS)
- Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-61, 2019 Edition, Pressure Testing Of Valves
- Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-67, 2017 Edition, Butterfly Valves
- Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-72, 2010 Edition, Ball Valves with Flanged or Butt-Welding Ends for General Service
- Manufacturers' Standardization Society of the Valve and Fittings Industry (MSS) SP-80, 2008 Edition, Bronze Gate, Globe, Angle and Check Valves
- Manufacturers' Standardization Society of the Valve and Fittings Industry (MSS) SP-80, 2019 Edition, Bronze Gate, Globe, Angle and Check Valves
- Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), SP-58, 2009, Pipe Hangers and Supports – Materials, Design, Manufacture, Selection, Application and Installation

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- Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), SP-58, 2018, Pipe Hangers and Supports – Materials, Design, Manufacture, Selection, Application and Installation
- NAVSEA Technical Publication T9074-AD-GIB-010/1688, (TP 1688), July 2012, Requirements for Fabrication, Welding, and Inspection of Submarine Structure
- Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) C6183, 2013, Cork and Rubber Composition Sheet; For Aromatic Fuel and Oil Resistant Gaskets
- Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) C6183, 2019, Cork and Rubber Composition Sheet; For Aromatic Fuel And Oil Resistant Gaskets
- Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) C6183B, 2019, Cork and Rubber Composition Sheet; For Aromatic Fuel and Oil Resistant Gaskets
- The Society for Protective Coatings (SSPC) Surface Preparation Specification No. 16 (SSPC-SP 16), 2010, Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals
- The Society for Protective Coatings (SSPC) Surface Preparation Specification No.11 (SSPC-SP 11), 2004, Power Tool Cleaning to Bare Metal
- The Society for Protective Coatings (SSPC) Surface Preparation Specification No.11 (SSPC-SP 11), 2012, Power Tool Cleaning to Bare Metal
- The Society for Protective Coatings (SSPC)/NACE International (NACE) 2006, Joint Surface Preparation Standard SSPC-SP 10/NACE No.2, Near-White Blast Cleaning
- The Society for Protective Coatings (SSPC)/NACE Joint Surface Preparation Standard SSPC-SP 10/NACE No.2, 2004, Near-White Blast Cleaning

**CONSOLIDATED LIST OF GOVERNMENT-FURNISHED PROPERTY**

The following is a list of property, which the Government will furnish. This list supersedes any other material obligations indicated or implied by referenced drawings.

<b>WORK ITEM</b>	<b>MTI</b>	<b>ITEM DESCRIPTION</b>	<b>NSN/PN</b>	<b>QTY</b>	<b>ESTIMATED COST (\$/UNIT)</b>
19	N	30in x 30in Watertight Hatch w/ 21in Scuttle, 15 PSI	N/A	2 ea.	14,500.00
23	Y	**Lockring Tool and Equipment	N/A	1 ea.	4000.00
25	N	Water Filter Assembly, (3M) (ACN) 44330-01-F20-5959	PN: DWS160-L NSN:	6 ea.	160.00
25	N	Water Filter Element, (3M)	PN: 56134-44	6 ea.	180.00
25	N	Placard - Potable Water Flush	N/A	8 ea.	50.00
27	N	18 in steel QAWTS (Raised 12in combing,	NAVSEA 803-1401892	1 ea.	\$9,500.00
29	N	Directional Control Valve (DCV)	NSN: 4810-01-F19-5719 PN: 4WRE10E75-2X/G24K4/V	1 ea.	1748.00
29	N	Amplifier Card	NSN: 5996-01-F19-5720 PN: VT-VRPA2-2-1X/V0/T1	1 ea.	1552.00
29	N	Mating Connector, 4P G4WIF PG7 SW	NSN: 5935-01-F19-5722 PN: R900023126	1 ea.	46.00
31	N	Cable, 3 shielded pairs	PN: 20265817	60 ft.	4.53/ft
31	N	Cable, 2 shielded pairs, 14 AWG	PN: 37-102-621	60 ft.	8.25/ft
31	N	Cable, 2 PR, 16 AWG	PN: 20260643	60 ft.	3.38/ft
31	N	Electrical Enclosure	PN: YMD-6896	1 ea.	
31	N	Connection Box, watertight	PN: YMD-10578	3 ea.	1,752.00
34	N	Deck Box: 3/4-in size w/10 turns, weld-in, cam-lock cover included	BFG P/N: VCDB-1200-10	15 ea.	576.00
34	N	90deg Gear Box: 3/4-in size, bronze	BFG P/N: VCG-3200	7 ea.	402.00
34	N	Consolidated Hinged Joint: 3/4in size, manganese bronze housing, sst shafts	BFG P/N VCK-1200	2 ea.	439.95
34	N	U-Joint 1-3/4in OD x 3/4in bore, steel	BFG P/N VCU-1142	18 ea.	110.99
34	N	Valve Coupling Rising Handwheel, 3/4in male	BFG P/N: VCU-3200	5 ea.	82.75
34	N	Valve Coupling Rising	BFG P/N: VCM-2200	2 ea.	139.00

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		Stem, 3/4in			
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\*Government-loaned property, which shall be returned to the vessel upon completion of the availability.

\*\*New or refurbished equipment that the Government may provide for installation in place of existing equipment.

\*\*\*Government-furnished property, which is to be supplied by either the vessel or the C4IT ServiceCenter

## **CONSOLIDATED LIST OF CRITICAL INSPECTION ITEMS**

The following is a list of work items, which contain Critical Inspection reports, which the Contractor must complete within the first 25% of the availability contract period (see SFLC Std Spec 0000, paragraph 3.2.6.5 (Inspection report particulars)):

Work Item	Title
20	Machinery Plant Control and Monitoring System, Groom
24	Deck Covering, Interior, Wet and Dry, Renew
29	Directional Control Valve, Upgrade
31	Crane Weight Harness, Renew
32	Weather Deck Drain, Repair

**PRINCIPAL CHARACTERISTICS - TENDER**

<b>175' WLM, BUOY TENDER</b>	
<b>PHYSICAL</b>	
Length overall	174' 8"
Length between perpendiculars	155' 1"
Depth	14' 8"
Maximum beam	36' 0"
Designed draft	8' 0"
Mast height (above 8' waterline)	58' 8"
Frame spacing	20"
Full load displacement	855.15 Long Tons SW
Light load displacement	719.78 Long Tons SW
Minimum op condition displ	852.19 Long Tons SW
<b>HULL</b>	
Hull material	Steel
<b>MACHINERY</b>	
Main propulsion	Two Caterpillar 3508 DITA V-8 diesel; 999 BHP ea @ 1500 RPM Two Ulstein 360 degree steerable Z-Drives, 403 SRPM @ 1600 ERPM
Reduction gears	Two Z-Drive units, Cardan shafting; 3.973:1 gear ratio
Shaft seal	John Crane Type ND
Shaft bearings	Five pedestal mounted, Cooper split roller bearings
Number of propellers	2
Number of blades	4
Diameter	57.1"
Rudders	None; Z-drive
Ship's service generators	Three Caterpillar Model 3406 DITA Turbocharged; 285KW, 450V, 60 Hz, 1800 RPM
Emergency diesel generator	One Caterpillar Model 3406 DIT 210 KW, 24V, 60 Hz, 1800 RPM
<b>TANK CAPACITIES</b>	
Diesel oil capacity (100%)	16,385 gal
Fresh water capacity (100%)	7,339 gal
Lubricating oil (100%)	86 gal

## General Requirements

### 1. SCOPE

1.1 Intent. This standard specification invokes general requirements for conducting vessel repairs performed by commercial contractors at a Coast Guard facility for Coast Guard vessels.

1.2 Term interchangeability. The terms 'Contractor', 'CG Yard', 'NAVSTA EVERETT', 'shipyard', 'Base', and 'Coast Guard Industrial' are used interchangeably in this specification. Where the primary service provider is Coast Guard personnel, references to contractor and other noted descriptors within this specification or within drawings, publications, SFLC Standard Specifications or other commercial and military references are deemed the same as prime service provider.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

None

#### COAST GUARD PUBLICATIONS

Coast Guard Commandant Instruction (COMDTINST) M10360.3 (series), Coatings and Color Manual  
Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), Latest Version,  
General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), Latest Version,  
Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 5550 (SFLC Std Spec 5550), Latest Version,  
Fire Prevention and Response

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), Latest Version,  
Requirements for Preservation of Ship Structures

#### OTHER REFERENCES

Code of Federal Regulations (CFR) Title 29, Part 1915, Occupational Safety and Health Standards for  
Shipyards Employment

NAVSEA Technical Publication T9074-AD-GIB-010/1688, (TP 1688), July 2012, Requirements for  
Fabrication, Welding, and Inspection of Submarine Structure

### 3. REQUIREMENTS

3.1 General. The Contractor must conform to all requirements specified in SFLC Std Spec 0000 and in this item, as applicable, during the performance of this availability. The requirement of this WI applies to all work under the scope of this contract, whether explicitly stated in all following work items or not, and to all other work subsequently authorized by changes, modifications, or extensions to the contract.

3.1.1 The Contractor must conform to all requirements specified in SFLC Std Spec 5550 and in the Fire Protection and Response work item, as applicable, during the performance of this availability.

3.1.1.1 Fire Safety Plan submission. The Contractor must submit a copy of the CFR 1915, Subpart P, Fire Safety Plan with the Contractor's bid when work will be conducted in a Contractor-owned facility. Include any MOA(s) with local firefighting facilities.

3.1.1.2 Fire Plan submission. The Contractor must submit a copy of the developed availability specific fire plan, as requested in the Fire Protection and Response work item, seven (7) days before the Arrival Conference.

**NOTE**

**NAVSEA drawings listed will be available FOR INSPECTION ONLY from the Coast Guard Port Engineer post-award. SFLC will not redistribute NAVSEA documents. Contractors can apply to NAVSEA headquarters directly for copies.**

3.2 Fire watch requirements. The Contractor must refer to 3.3.1.3 (Fire watch requirements) of SFLC Std Spec 0000, in accomplishing the following task:

- Provide portable fire extinguishers for Coast Guard fire watch personnel. Coast Guard fire watch is in lieu of contractor personnel during the hours of 0800-1700, Monday through Friday, and limited to two Coast Guard fire watch personnel.
- Contractor must provide any additional fire watch personnel and fire extinguishers needed for hotwork that occurs beyond the hours and personnel requirements listed above.

3.3 Preservation requirements. The Contractor must accomplish all preservation tasks, including touch-ups, in accordance with SFLC Std Spec 6310.

3.3.1 Brand name approval. Ensure that all contractor-furnished coatings are in accordance with SFLC Std Spec 6310, Appendix C (Authorized Coatings for Use on Cutters and Boats).

3.3.2 Coating colors and system color schemes. The Contractor must obtain a written KO authorization to deviate from any coatings required in SFLC Std Spec 6310 Appendix C before work.

3.3.3 In-process quality control measures. The Contractor must abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for "critical-coated surfaces").

3.3.3.1 Quality control requirements. The Contractor must abide by the following when performing preservation related inspections. The following measurements must be randomly spaced throughout for the purposes of providing a representation of the entire prepared or coated surface.

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3.3.3.1.1 Surface profile measurements. One surface profile measurement must be taken for every 200 square feet for the first 1000 square feet; for each additional 500 square feet or less, one profile measurement must be taken. Profile measurements must be taken in accordance with SFLC Std Spec 6310, paragraph 3.1.8.3 (Surface profile measurements). A “measurement” for surface profile is defined as follows:

- ASTM D4417, Method B: One profile measurement is the average (mean) of 10 individual readings.
- ASTM D4417, Method C: One profile measurement is the average (mean) of 2 individual readings.

3.3.3.1.2 Soluble salt conductivity measurements. 5 conductivity measurements must be taken every 1000 square feet. For submerged (immersed) applications conductivity measurements must not exceed 30 microsiemens/cm. For non-submerged (non-immersed) applications conductivity measurements must not exceed 70 microsiemens/cm. If a conductivity check fails, clean the surface in accordance with SFLC Std Spec 6310, paragraph 3.1.8.5 (Soluble salt removal).

3.3.3.1.3 Coating thickness measurements. Three area measurements must be taken for the first 1000 square feet; for each additional 1000 square feet, perform an additional area measurement. A “measurements” for coating thickness is defined as follows:

- SSPC-PA 2 defines an area measurement as 5 separate spot measurements randomly spaced throughout a 100 square foot area.
- SSPC-PA 2 defines a spot measurement as 3 gage readings and each new gage reading the probe must be moved to a new location within a 1.5 inch diameter circle defining the spot.

3.4 Welding and brazing requirements. The Contractor must perform all welding and allied processes, and NDE in accordance with SFLC Std Spec 0740.

3.4.1 HY-130 material substitution. The Contractor must be aware that HY-130 steel plating is no longer commercially available. For the purpose of performing flight deck repairs on US Coast Guard WMEC-270 “B-Class” cutters, Weldox 900 steel plating has been approved as a replacement for HY-130. Due to the similarity in material properties and weldability of HY-130 and Weldox 900, all welding procedures and welder qualifications for welding Weldox 900 must be the same as those outlined in NAVSEA TP 1688 as applicable for welding HY-130.

3.4.2 Standard spec modification. For any welding involving HY-130 on the flight deck of WMEC-270 “B-Class” cutters, perform all welding and allied processes, and non-destructive evaluation (NDE) in accordance with NAVSEA TP 1688. The Contractor must be aware that the welding requirements specified in this document take precedence over paragraph 3.3.6 of SFLC Standard Spec 0000 for the purpose of welding involving HY-130.

3.4.3 Approval to weld HY-130. To obtain Coast Guard approval to weld on HY-130 steel for WMEC-270 “B-Class” cutters, the Contractor must provide written Performance Qualification Records (PQR’s) for each process to be used. The PQR’s must be approved by one of the regulatory agencies affirming that the WPS meets the welding requirements of NAVSEA TP 1688. In addition, the Contractor must ensure that all subcontractors, prior to performing welding operations, have qualified procedures by meeting all the requirements set forth in this document.

### NOTE

**NAVSEA approval is NOT required for welding procedures submitted but the procedures must be reviewed and shown to satisfy the requirements set forth in NAVSEA TP 1688, by a welding regulatory agency. The requirements for welding Weldox 900 are considered the same as those for welding HY-130.**

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3.5 Environmental protection requirements. The Contractor must adhere to the following environmental protection requirements in accordance with the SFLC Stand Spec 0000:

3.5.1 USCG / Naval facilities. The Contractor must provide and maintain environmental protection as defined in SFLC Std Spec 0000 Appendix B, Requirements for Environmental Protection at USCG / Naval Facilities, during the performance of this availability. Contractor must plan for and provide environmental protective measures to control pollution that develops during normal practice, as well as plan for and provide environmental protective measures required to correct conditions that develop during the project. Contractor must comply with applicable Federal, state, and local laws, codes, ordinances, and regulations in their entirety. Any reference to a specific portion of a Federal, state, or local law, code, ordinance, or regulation in this or any other item must not be construed to mean that relief is provided from any other sections of the law, code, ordinance, or regulation.

3.5.1.1 USCG Generator status. The activity Generator Status for Naval Station Newport RI is a (HW Generator).

3.5.1.2 Plans and permits. Naval Station Newport has unit specific permits including the following:

- Spill Prevention Control and Countermeasures (SPCC) Plan: Unit has a SPCC Plan which requires certain unit-specific procedures be followed for the storage, inspection, and transfer of petroleum products in containers 55 gallons or greater.
- National Pollutant Discharge Elimination System (NPDES) Storm Water (SW) Permit: Unit has an NPDES SW permit which requires unit-specific procedures be followed for the storage and inspection of equipment and materials which may contribute contaminants to storm water discharges.
- Air Emission Permit: Unit has an Air Emission Permit which requires unit-specific procedures be followed for the emissions of VOCs and hazardous air pollutants.

3.5.2 Test and procedures. The Contractor is required to promptly conduct tests and procedures for the purpose of assessing whether operations are in compliance with applicable Environmental Laws. Analytical work must be done by qualified laboratories; and where required by law, the laboratories must be certified.

3.5.3 Regulatory notifications. The Contractor is responsible for all regulatory notification requirements in accordance with Federal, State and local regulations. In cases where the Coast Guard must also provide public notification, such as storm water permitting, the Contractor must coordinate with the Contracting Officer or COR, and if work is being performed at a USCG / USN Facility, the local Facility Engineer or Engineering Officer. The Contractor must submit copies of all regulatory notifications to the Contracting Officer and the local Facility Engineer or Engineering Officer prior to commencement of work activities. Regulatory notifications must be provided for including but not limited to demolition, renovation, National Pollutant Discharge Elimination System (NPDES) defined site work, and remediation of controlled substances such as asbestos, hazardous waste, and lead paint.

3.5.4 Environmental manager. The Contractor must appoint in writing an Environmental Manager for the project, who is responsible for coordinating Contractor compliance with Federal, State, local, and station environmental requirements. The Environmental Manager must ensure compliance with Hazardous Waste Program requirements, including hazardous waste handling, storage, manifesting, and disposal; implement the Contractors' Environmental Management Plan; ensure that all environmental permits are obtained, maintained, and closed out; ensure compliance with Storm Water Program Management requirements; ensure compliance with Hazardous Materials including storage, handling, and reporting requirements; as well as coordinate any remediation of regulated substances such as lead, asbestos, and polychlorinated biphenyl (PCB). This may be a collateral position; however the individual must be trained to accomplish the following duties; ensure waste segregation and storage compatibility requirements are met; inspect and manage Satellite Accumulation areas; ensure only authorized personnel add wastes to containers; ensure all Contractor personnel are trained in 40 CFR requirements

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and individual position requirements; coordinate removal of waste containers; and maintain the Environmental Records binder and required documentation, including environmental permits compliance and close-out.

3.5.5 HW disposal. Contractor must comply with SFLC Std Spec 0000 Appendix B, Requirements For Environmental Protection At USCG / Facilities for HW disposal, and ensure that waste removals are conducted during normal business hours (0800-1600) on Monday through Friday (excluding holidays).

3.5.6 Additional Requirements. The Contractor must be aware of the following:

3.5.6.1 No Contractor or Subcontractor must have the authority to sign a Hazardous Waste Manifest using the Coast Guard facility's EPA Generator ID Number or remove contract generated hazardous waste from the Coast Guard facility without COR or KO-approval.

3.5.6.2 Local environmental regulations at the Government facilities may be more stringent. As with all environmental regulations, the Contractor must prepare for and comply with local and state regulations.

3.5.6.3 Coast Guard facilities do not maintain Facilities Response Plans (FRPs) per 33 CFR 154. Contractor must furnish the FRP when required for over-the-water liquids transfers to and from vessels and is required for oil/fuel transfers to/from vessels for 250 barrels (10,500 gallons) or more.

3.6 Local Policy. The Contractor must refer to site (e.g., Base) Regulations and Instructions for details regarding local policies (e.g., crane services, parking, or facility usage).

3.7 SFLC Standard Specification approved changes. The Contractor must be aware that the following are approved changes to published SFLC 2020 Edition Standard Specifications and supersede published content:

3.7.1 SFLC Standard Specification 8636. Add missing paragraphs between 3.2 and 3.5 of Std Spec 8636 as follows:

“3.3 Access cut boundaries. The Contractor shall ensure that access cuts comply with the requirements and restrictions detailed in the following and in SFLC Std Spec 0740 and referenced codes.

3.3.1 Location of boundaries. Boundaries of access cuts and closure plates shall, in general, be located between principal ship framing, bulkheads, and other structural members and shall be at least three inches from any of these members or from the toes of other welds. A reduction in this three-inch minimum may be approved by the KO on a case-by-case basis provided sufficient clearance is maintained for welding and inspection requirements. The boundaries of access cuts and closure plates should land on existing butts or seams, wherever practicable. The boundaries of prior access cuts should be utilized wherever possible. Boundaries may extend across one or more frames as required for the size of the opening.

3.3.2 Access hole dimensions and arrangements. Holes or access cuts shall be the minimum size necessary and shall be in accordance with the following:

- Rectangular access cuts and closure plates welded into primary hull structure shall be at least 12 inches wide in the lesser dimension.
- For circular access cuts, the minimum diameter shall be  $4T$ , where  $T$  = thickness of the involved structural member, but not less than three inches.
- Circular closure plates for access cuts less than two feet in diameter shall be

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dished 1/16 to 1/8 inch to allow for shrinkage when welded.

- Corners of rectangular access cuts and closure plates shall have a minimum radius of 6 inches except when a boundary lands on an existing hull longitudinal seam or transverse butt weld.
- Corners at an existing seam or butt shall intersect at a 90-degree angle.
- Cuts that are to cross existing butts or seams shall do so at an angle of 90 degrees plus or minus 15 degrees.
- In primary hull structure, existing welds forming the boundary of a cut shall be cut back 3 inches beyond the toe of the access cut, except that the cut back shall not intersect or cross an existing weld, frame, or structural member. In which case, the cut back may be reduced to a minimum of two inches in length.
- Existing welds crossed by the cut shall not be cut back.

3.3.3 Primary hull structure. Primary Hull Structure includes the shell, main strength decks, principal longitudinal bulkheads, vertical keel, deep web girders and stiffeners designed to withstand the ship bending stress.

3.3.4 Mechanically fastened joints. Welding closer than six inches to a mechanically fastened joint should be avoided. When access cuts cross or come within six inches of a mechanically fastened joint, the fasteners shall be checked for tightness and if necessary, loose fasteners shall be seal welded or removed, and replaced for a distance of 6 inches beyond the edge of the cut. When a cut crosses a mechanically fastened seam the cut plates shall be repaired using single V welds backed with glass tape (MIL-C-20079) to prevent fusion between the mechanically fastened plates.

3.4 Ship integrity maintenance. The Contractor shall maintain safety and ship integrity by installing temporary guarding and coaming, in addition to weathertight and watertight closures. Remove these temporary fabrications after closing the hull access, and grind surfaces flush in way of removals. For shell plating cuts made at or below the waterline where temporary closures are impractical, the Contractor shall secure each vulnerable compartment and subdivision to minimize potential damage to the extent permitted by the scope and urgency of the work.

3.4.1 Guarding. Install temporary guards in accordance with 29 CFR 1915.73.

3.4.2 Coaming. Ensure that in areas where flammable liquids may be stored, a 4-inch-high metal coaming shall be installed on the surface of the deck with tack welds and fully sealed with caulking compound. The coaming shall encircle the access cut in the deck.

3.4.3 Weathertight and contamination closures. Fabricate temporary closures, using fire retardant material, before cutting access openings and install closures whenever access is not in use. Closures shall be:

- Constructed to protect the access from inclement weather and entry of contaminants (shall include a coaming or dam on the deck to redirect rain runoff away from the opening).
- Fitted with fasteners that permit rapid installation and removal.
- Able to support a minimum of 150 pounds per square foot for horizontal

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- Where the access opening is in way of a removed hatch, scuttle or door, the closure shall be configured to allow normal passage of ship's personnel and equipment.

3.4.4 Watertight closures. Ensure that access openings created four feet or less above the maximum anticipated waterline shall include temporary watertight closures when the vessel is waterborne.

**NOTE**

**NAVSEA S0600-AA-PRO-160/CH16 provides requirements for design, fabrication, and installation of temporary watertight closures."**

3.7.2 SFLC Standard Specification 0000. Replace paragraph 3.3.4 Vessel access, as follows:

"3.3.4 Vessel access. During work at the Contractor's facility, provide access and/or egress to and from the vessel in accordance with 29 CFR 1915.74, Subpart E. Provide a minimum of two gangways that have the following:

- Adequate walking surface width and strength and be safely secured.
- A railing, with a mid-rail, on each side of the gangway, and a turn table if necessary.
- Substantial steps properly secured and equipped with at least one handrail, when the upper end of the gangway rests on or is flush with the top of the bulwark of the dock.
- Nets or other suitable protection on both sides, when there is a danger of personnel falling between the ship and the dock. Nets and other suitable protection must extend beyond the projected area of the access and egress points so as to catch personnel that may be falling outward: i.e., the nets must be wider than the gangway.
- Proper trimming at all times.
- Adequate illumination for their full length.
- Separated by one-fourth the length of the vessel, at a minimum, as to mitigate the possibility that an incident could block both means of escape."

3.7.3 SFLC Standard Specification 8635. Replace and add paragraphs as follows,

"3.3.10.4.1 Contractor-furnished supporting equipment. Provide all hoses and fittings needed to supply water to the system. Provide pressure gauges at the connection(s) to the ship and the furthest firehose station to allow personnel to clearly read the gage-face to demonstrate or record the required water pressure is available at all energized portions of the system."

"3.2.3 Shipboard access/egress and routing of temporary services. Maintain a primary and secondary means of access/egress for each vessel, where practicable. Pre-plan for the installation of temporary services to minimize the total number of service leads penetrating the hull by maximizing the use of backbones and/or manifolds for industrial services. Pre-planning for the installation of temporary services shall include removal (first in, last out, when no longer required). Pay

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special attention to transitional spaces (cross passages, top and bottom of stairwells) where services could potentially fall and restrict emergency personnel egress and/or casualty responder access."

"3.2.3.2 Materials used for suspending temporary services. Temporary services shall be suspended at regular intervals, to prevent impeding personnel access/egress and emergency response, using a high temperature line that meets the noncombustibility test requirements contained in reference (e). When using steel wire rope, or other potentially abrasive material, an anti-chafing material shall be used to prevent damage of the temporary service line. When available, temporary service lines may be run through the ship's structural elements (i.e., cable ways, light stanchions, etc.). When the routing of temporary services overhead is not practicable, temporary services, rigging of hoses, welding leads, and temporary lights shall be clear of the decks on temporary "trees" or brackets and be arranged to minimize tripping and other hazards."

"3.2.3.5 Quick Disconnect Fittings. QDFs shall be located within 10 feet of designated vertical and horizontal fire zone boundaries. When practicable, QDFs shall be installed within 10 feet of hull penetrations used for personnel access, to facilitate the deployment of smoke control curtains. QDFs must be capable of being disconnected safely on pressurized or energized systems unless approved for use as described in paragraph 3.2.3.7. Pressurized and disconnected QDFs must prevent wetting of energized equipment. For hull openings used for services only, QDFs are not required, provided the opening is fitted with an air and smoke control "sock" that remains in place around the services. Air and smoke control curtains are not intended to provide an airtight seal of the hull opening. Rather, the curtains or socks, are to ensure that emergency responders can control the flow of air and smoke through the opening to allow for de-smoking of compartments and minimize "chimney" effects. Curtains shall be made of fire-resistant fabric meeting the requirements of NFPA 701."

"3.2.3.7 Service lines crossing fire zone boundaries. When service lines transit a fire zone boundary which cannot be safely disconnected locally (e.g., high voltage cables), the COR shall approve, in advance, the method to safely secure and remove the service."

3.7.4 SFLC Standard Specification 6310.

3.7.4.1 On page 2, replace REFERENCE "MIL-PRF-24667C, May 2008, Coating System, Non-Skid, for Roll, Spray, or Self-Adhering Application" with "MIL-PRF-24667D, FEB 2021, Coating System, Non-Skid, for Roll, Spray, or Self-Adhering Application"

3.7.4.2 On page 9, replace the NOTE under paragraph 3.1.8.5 as follows:

**NOTE**

**De-ionized water may be used in cases where available fresh water has excessive chloride/chlorine content. Submit a CFR prior to using de-ionized water.**

#### **4. NOTES**

4.1 QA inspection forms. QA inspection forms (QA-1 thru QA-5), required in SFLC Std Spec 6310 to be completed and submitted during preservation of “critical-coated surfaces”, are provided at the end of this document.

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**QA-1 - QUALITY ASSURANCE INSPECTION FORM**  
**(PRESERVATION CHECKLIST)**

VESSEL NAME	HULL #	WORK ITEM #	WORK ITEM TITLE
LOCATION OF WORK (INCL. FRAME #'S)			AREA (SQFT)

<b>CHECKPOINT 1 – COATING SYSTEM COMPLIANCE</b>			
	Ensure all coatings are in compliance with SFLC Std Spec 6310, Appendix C.		
<b>CHECKPOINT 2 - PAINT STORAGE</b>			
	Ensure all coatings are kept at a temperature of 65 to 85°F at all times, unless otherwise specified by the coating mfg.		
<b>CHECKPOINT 3 - AMBIENT CONDITIONS</b>			
	Ensure surface and surrounding temperatures are each between 50 and 90°F for water-containing coatings, and 35 and 95°F for other coatings, unless otherwise specified by the coating manufacturer(s).		
	Ensure maximum relative humidity (RH) is as follows, from surface preparations through final curing of topcoat: 50% for tanks, voids, and vent plenum; and 85% for all other areas, unless otherwise specified by manufacturer(s).		
	Ensure surface temperature is at least 5°F above the dew point, unless otherwise specified by the coating mfg.		
<b>CHECKPOINT 4 - PRE-SURFACE PREPARATION</b>			
	Remove surface contaminants (soluble salts, loose rust, mud, and marine growth) with low pressure fresh water wash down (maximum 5,000 psi). If oil and grease are present, perform solvent cleaning, as per SSPC SP-1.		
	Verify equipment setup, blast media, and surface preparation methods match designated test coupon.		
<b>CHECKPOINT 5 - SURFACE PREPARATION</b>			
	Verify environmental conditions (see CHECKPOINT 3).		
	Ensure cleanliness of prepared surface is as per specification (i.e.: SSPC SP-11, SP-10, SP WJ-2...).		
	Verify surface anchor profile using ASTM D4417-Methods B or C against SFLC Std Spec 6310. Conduct profile readings at a minimum of 5 locations for the first 1000-sqft area, and 2 locations for each succeeding 1000-sqft area.		
	Measure soluble salt conductivity in accordance with SSPC-Guide 15. Conduct 5 measurements per each 1000-sqft area (max. threshold: 70 microsiemens/cm for non-submerged surfaces, 30 microsiemens/cm for submerged surfaces).		
<b>CHECKPOINT 6 - PRIMER COAT APPLICATION</b>			
	Verify environmental conditions (see CHECKPOINT 3).		
	Verify proper mixing and stand-in (induction) times.		
	Ensure no paint is applied when the temperature is expected to drop to freezing before the paint has dried.		
	Ensure surfaces are completely dry, unless otherwise allowed by the coating manufacturer(s).		
	Verify wet film thickness (WFT) at random, to prevent under or over application. Verify final DFT.		
	Brush out all runs, sags, drips, and puddles.		
	Perform visual inspection for holidays and other defects.		
<b>CHECKPOINT 7 – STRIPE COAT APPLICATION</b>			
	Verify environmental conditions (see CHECKPOINT 3).		
	Ensure overcoating window is as per manufacturer’s instructions.		
	After primer coat (mist coat after inorganic zinc), brush-apply un-thinned coat of same primer paint over edges, weld seams, cut-outs, and areas of complex geometries @ 3-4 mils wet film thickness (WFT).		
<b>CHECKPOINT 8 – TOP COAT APPLICATION</b>			
	Verify environmental conditions (see CHECKPOINT 3).		
	Ensure overcoating window is as per manufacturer’s instructions.		
	Verify proper mixing and stand-in (induction) times, as applicable.		
	Verify wet film thickness at random, to prevent under or over application.		
	Brush out all runs, sags, drips, and puddles.		
<b>CHECKPOINT 9 – FINAL INSPECTION</b>			
	Verify final system dry film thickness. Conduct 5 sets of 3 readings for each of the first 3 100-sqft areas, followed by 5 sets of 3 readings for each succeeding 1000-sqft area.		
	Ensure that system cure is in accordance with manufacturer's recommendation for intended service.		
	Ensure potable water tank exhaust ventilation is maintained continuously from and during coating application through final system cure, to exhaust all solvent to the atmosphere and to prevent solvent entrapment.		
	For immersion coatings (including tank U/W body), record date and time of the following events: Final coat application: ____/____/____; Return to service or removal from environment controls: ____/____/____		
<b>CHECKPOINT 10 – RECORD KEEPING</b>			
	Complete, sign, and submit all provided QA Inspection Forms.		
NAME OF QP-1/NACE INSPECTOR	SIGNATURE	CERT. #	DATE / TIME
NAME OF CG REPRESENTATIVE	SIGNATURE	UNIT	DATE/TIME



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**QA-3a - QUALITY ASSURANCE INSPECTION FORM**  
**(SURFACE PROFILE LOG FOR PROFILE MEASUREMENTS IAW ASTM D4417-METHOD-C)**

VESSEL NAME	HULL #	WORK ITEM #	WORK ITEM TITLE
LOCATION OF WORK (FRAME REFERENCES)			AREA (SQFT)

SURFACE PREPARATION METHOD	PROFILE ACHIEVED (MILS)		
	MIN	MAX	MEAN
SSPC-SP-10/NACE No. 2	<input type="checkbox"/>		
SSPC-SP WJ-2/NACE WJ-2	<input type="checkbox"/>		
SSPC-SP-3	<input type="checkbox"/>		
SSPC-SP-11	<input type="checkbox"/>		
SSPC-SP-11 (inaccessible area)	<input type="checkbox"/>		
Brush-blasting (non-metallic substrate)	<input type="checkbox"/>		
<b>ABRASIVE MANUFACTURER:</b>		<b>ABRASIVE SIEVE SIZE:</b>	

<b>PLACE SURFACE PROFILE REPLICA TAPES IN THE SPACES PROVIDED BELOW, TO SERVE AS PERMANENT QA RECORD. MAINTAIN A SEPARATE LOG FOR EACH LOCATION. WHEN AN AREA IS DIVIDED INTO SEPARATE SECTIONS, MAINTAIN A SEPARATE LOG FOR EACH SECTION.</b>					
Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here			
Reading (mils):		Reading (mils):		Reading (mils):	
Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here			
Reading (mils):		Reading (mils):		Reading (mils):	
Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here			
Reading (mils):		Reading (mils):		Reading (mils):	
Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here			
Reading (mils):		Reading (mils):		Reading (mils):	
Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here			
Reading (mils):		Reading (mils):		Reading (mils):	
<b>MEAN MIL READING (IAW ASTM D4417-METHOD C) FOR ABOVE 15 READINGS:</b>					

NAME OF QP-1/NACE INSPECTOR	SIGNATURE	CERT. #	DATE / TIME
NAME OF CG REPRESENTATIVE	SIGNATURE	UNIT	DATE/TIME

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**QA-3b - QUALITY ASSURANCE INSPECTION FORM**  
**(SURFACE PROFILE LOG FOR PROFILE MEASUREMENTS IAW ASTM D4417-METHOD-B)**

VESSEL NAME	HULL #	WORK ITEM #	WORK ITEM TITLE
LOCATION OF WORK (INCL. FRAME #'S)			AREA (SQFT)

SURFACE PREPARATION METHOD		PROFILE ACHIEVED (MILS)		
		MIN	MAX	MEAN
SSPC-SP-10/NACE No. 2	<input type="checkbox"/>			
SSPC-SP WJ-2/NACE WJ-2	<input type="checkbox"/>			
SSPC-SP-3	<input type="checkbox"/>			
SSPC-SP-11	<input type="checkbox"/>			
SSPC-SP-11 (inaccessible area)	<input type="checkbox"/>			
Brush-blasting (non-metallic substrate)	<input type="checkbox"/>			
<b>ABRASIVE MANUFACTURER:</b>		<b>ABRASIVE SIEVE SIZE:</b>		

**RECORD MEASUREMENTS TAKEN IN THE SPACES PROVIDED BELOW, TO SERVE AS PERMANENT QA RECORD. MAINTAIN SEPARATE LOG FOR EACH LOCATION. WHEN AN AREA IS DIVIDED INTO SEPARATE SECTIONS, MAINTAIN A SEPARATE LOG FOR EACH SECTION.**

Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
<b>Mean Mils Reading (IAW ASTM D4417-Method B for above 10 readings (by column):</b>					
Mean Reading (mils)					

NAME OF QP-1/NACE INSPECTOR	SIGNATURE	CERT. #	DATE / TIME
NAME OF CG REPRESENTATIVE	SIGNATURE	UNIT	DATE/TIME



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**QA-5 - QUALITY ASSURANCE DATA FORM**  
**(COATING THICKNESS)**

(Use one sheet for each sequence)

VESSEL NAME	HULL #	WORK ITEM #	WORK ITEM TITLE

COATING MFG	PRODUCT NAME	BATCH #	INDUCTION TIME	COATING SYSTEM SEQUENCE (PRIMER/TOUCHUP/3RD COAT, ETC.)

DRY FILM THICKNESS (DFT) MEASUREMENTS IAW SSPC-PA 2.						
SPOT	1	2	3	4	5	AVERAGE VALUE
*BASE METAL READING (BMR)						
*Required, If Magnetic Pull-Off (Type I/Banana) Gauge Is Used.						

LOCATION (FRAME REFERENCE):								
SPOT	1	2	3	4	5	OVERALL AVG. DFT	ADJUSTMENTS	
1							AVG. BMR	DEVIATION
2								
3							BEFORE ADJUSTMENTS	AFTER ADJUSTMENTS
AVG.								

LOCATION (FRAME REFERENCE):								
SPOT	1	2	3	4	5	OVERALL AVG. DFT	ADJUSTMENTS	
1							AVG. BMR	DEVIATION
2								
3							BEFORE ADJUSTMENTS	AFTER ADJUSTMENTS
AVG.								

LOCATION (FRAME REFERENCE):								
SPOT	1	2	3	4	5	OVERALL AVG. DFT	ADJUSTMENTS	
1							AVG. BMR	DEVIATION
2								
3							BEFORE ADJUSTMENTS	AFTER ADJUSTMENTS
AVG.								

APPLICATION METHOD (AIRLESS, CONVENTIONAL SPRAY, ROLLED)	AVERAGE DFT

NAME OF QP-1/NACE INSPECTOR	SIGNATURE	CERT. #	DATE / TIME
NAME OF CG REPRESENTATIVE	SIGNATURE	UNIT	DATE/TIME

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4.2 Tank and Void Assessment form.

<b>SFLC-ESD-25</b>		<b>TANK AND VOID ASSESSMENT FORM</b>			
<input type="button" value="PRINT"/> <input type="button" value="RESET"/>					
<b>GENERAL DATA</b> Note: Use SFLC-ESD-29 for Compartments other than Tanks & Voids.					
Inspector's Name:		Organization:		Contact Info:	
Cutter Name:		Cutter Class:		Hull:	
Tank:		Service:		Tank Area:	Gallons:
Solid Balast:	Access Compt:	Date:	Assessment Reason:		
<b>ACCESS DATA</b>					
Manhole and cover condition:			Tank Penetration Condition:		
<b>VENT OVERFLOW DATA</b>					
Present: <input type="radio"/> Yes <input type="radio"/> No		Check Valve Installed: <input type="radio"/> Yes <input type="radio"/> No		Check Valve Operates Properly: <input type="radio"/> Yes <input type="radio"/> No	
<b>LADDER DATA</b>					
NR of Ladder(s) Present: <input type="radio"/> Yes <input type="radio"/> No		Ladder Damaged: <input type="radio"/> Yes <input type="radio"/> No		Ladder Material:	
<b>TANK LEVEL INDICATOR (TLI) DATA</b>					
TLI Present in Tank: <input type="radio"/> Yes <input type="radio"/> No		TLI Damaged: <input type="radio"/> Yes <input type="radio"/> No		TLI Type:	
<b>SOUNDING TUBE DATA</b>					
Sounding Tube Present in Tank: <input type="radio"/> Yes <input type="radio"/> No		Sounding Tube Damaged: <input type="radio"/> Yes <input type="radio"/> No			
Striker Plate Damaged (>50%): <input type="radio"/> Yes <input type="radio"/> No					
<b>CATHODIC PROTECTION DATA</b>					
Cathodic Protection in Tank: <input type="radio"/> Yes <input type="radio"/> No		Total Zincs:		Number of Zincs > 50% Depleted:	
<b>1-6      Cleanliness &amp; Housekeeping</b>					
Clean to light layer or residue		1-2 (G)	Comments:		
Loose accumulation scale		3-4 (Y)			
Impending residue and sediments		5-6 (R)			
<b>%      1-6      Coating Systems</b>					
All Painted Surfaces		1-2 (G)	Comments:		
		3-4 (Y)			
		5-6 (R)			
<b>%      1-6      Structural</b>					
Corrosion		1-2 (G)	Comments:		
		3-4 (Y)			
		5-6 (R)			
Pitting & Grooving		1-2 (G)	Comments:		
		3-4 (Y)			
		5-6 (R)			
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<b>SFLC-ESD-25</b>	<b>TANK AND VOID ASSESSMENT SHEET</b>
<div style="border: 1px solid black; padding: 2px; display: inline-block;">PRINT</div>	

<b>Structural Integrity Data</b>			
Estimated Total Linear Feet of Structure Requiring Repair:		Estimated Total Square Feet of Plating Requiring Repair:	
Cracks/ Fractures Present:	<input type="radio"/> Yes <input type="radio"/> No	Buckling/Deflections/ Distortions Present:	<input type="radio"/> Yes <input type="radio"/> No
Holes Present:	<input type="radio"/> Yes <input type="radio"/> No	Material Wastage Present:	<input type="radio"/> Yes <input type="radio"/> No
All Welds Intact:	<input type="radio"/> Yes <input type="radio"/> No	Structural Evaluation Recommended:	<input type="radio"/> Yes <input type="radio"/> No

**PHOTOGRAPHS**

Pictures Taken (enter quantity):

**Note: To add pictures to this form, Work Station must have Adobe Acrobat (not Reader) installed.**  
 Add all photos and photo comments to a word document and save file. Open this form and click "Combine Files". Add the document with photos you've just saved and save as a new combined .pdf files.

Additional Comments:

## WORK ITEM 1: Tanks, Potable Water, Clean and Inspect

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the following tank(s):

**TABLE 1 - TANKS**

TYPE OF TANK	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)
Potable Water	1-94-0-W	2,167	68
Potable Water	2-36-1-W	5,172	163

1.2 Government-furnished property.

None.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Plans

Coast Guard Drawing 175 WLM 533-006, Rev D, Independent Tank Potable Water Hb 950

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020,  
 General Requirements

#### OTHER REFERENCES

American National Standards Institute/NSF International (ANSI/NSF) 61, 2015, Drinking Water  
 System Components - Health Effects

American National Standards Institute/American Water Works Association (ANSI/AWWA)  
 C652, 2011, Disinfection of Water-Storage Facilities

### 3. REQUIREMENTS

#### 3.1 General.

##### 3.1.1 CIR.

None.

##### 3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Fluid contents
- Piping
- RO system components
- Deck grating.

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.2 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard personnel perform an initial operational test of the equipment listed below to demonstrate existing operational condition. Submit a CFR.

- TLI

3.3 Plug log. The Contractor must keep a written record of all plugs put in any tanks vents. A separate list must be kept for each tank being entered.

3.3.1 Ensure that all plugs are removed from each tank upon completion of work in the tank.

3.3.2 Ensure the plug log is available to the Coast Guard inspector when the inspector is performing his close-out inspection on each tank.

3.4 Tank content removal. The Contractor must remove and dispose of all fluids and/or residues in accordance with all applicable Federal, state, and local regulations. The Contractor must notify the Dockmaster prior to filling or draining the potable water tank(s), when this item is being executed in a

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drydock availability. The Contractor must refer to Coast Guard drawings 175 WLM 601-003 and 175 WLM 533-006 for guidance.

3.5 Tank cleaning. The Contractor must remove tank cover(s); clean tank interior surfaces free of all foreign materials, such as sediment, sludge and bacterial growth. Remove all persistent residues, taking care not to damage any tank coating system. Remove cleaning media and residues continuously from the tank during the washing process. Remove any residual wash media and wipe up residual moisture with clean lint-free cloths. Collect, contain, and dispose of all wash media, residues, and cleaning materials in accordance with all Federal, state, and local regulations.

3.6 Inspection. The Contractor must visually inspect all tank interior surfaces, including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Complete the “Tank and Void Assessment Form” (found in the Work Item titled “General Requirements”) and submit via CFR. Electronic PDF version of this form will be furnished by the COR upon request. Include the following, as applicable:

- Tank structural condition.
- Inaccessible areas, if any.
- Condition of tank coating, including measurements taken, percentage, location, and type of coating failure.
- Tank level indicator (TLI) and/or float switch condition (if applicable).
- Sounding tube and striker plate condition.
- Suction and discharge piping condition.
- Fastener material and condition.

3.7 Tank closing. The Contractor must notify the COR at least 24 hours prior to closing the tank(s) and ensure tank closure is accomplished in the presence of the Coast Guard Inspector. After satisfactory inspection by the Coast Guard Inspector, and completion of all authorized repairs, close tank manhole cover(s) with new gasket material conforming to ANSI/NSF 61. Renew all stud cotton grommets (as applicable) upon reinstallation of manhole cover(s).

3.7.1 The Contractor must renew up to 10% of nuts and washers.

3.8 Tank disinfecting. After all other work involving the potable water system and tank closing have been completed, the Contractor must disinfect and treat the affected potable water tank(s) and associated disturbed piping and components, as necessary, to meet or exceed the requirements of AWWA C652. After tank disinfecting; remove and dispose of all treated water in accordance with all Federal, state and local regulations. Ensure that no one enters the tanks once disinfection is completed.

### NOTE

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.9 Operational test, post repairs. After completion of work and in the presence of the Coast Guard Inspector, the Contractor must thoroughly test and demonstrate the equipment listed below to be in satisfactory operating condition. Submit a CFR.

- TLI

**4. NOTES**

This section is not applicable to this work item.

## WORK ITEM 2: Voids, Accessible, Clean and Inspect

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the following void(s):

**TABLE 1 - VOIDS**

TYPE OF STRUCTURE	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)
Void	3-18-0-T	2,000	10
Void	3-52-0-V	5,000	10

1.2 Government-furnished property.

None.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Drawings (552-564)

Coast Guard Drawing 175 WLM 601-002, Rev H, Booklet of General Drawings (IDA LEWIS)

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020,  
 General Requirements

#### OTHER REFERENCES

ASTM International (ASTM) D1330, 2015, Standard Specification for Rubber Sheet Gaskets

### 3. REQUIREMENTS

#### 3.1 General.

##### 3.1.1 CIR.

None.

##### 3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.2 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard personnel perform an initial operational test of the TLI's for tanks listed in paragraph 1.1 (Intent), to demonstrate existing operational condition. Submit a CFR.

3.3 Cleaning and inspection requirements. The Contractor must refer to Coast Guard Drawing 175 WLM 601-003 for guidance. to accomplish the following tasks:

3.3.1 Content removal. The Contractor must remove and dispose of all fluids and/or residues in accordance with all applicable Federal, state, and local regulations.

3.3.2 Cleaning. The Contractor must remove access cover(s). Clean the designated structure's interior surfaces free of all foreign materials, such as sediment, sludge and fungal growth. Remove all persistent residues, taking care not to damage the tank coating system. Remove cleaning media and residues continuously from the compartment during the washing process. Remove any residual wash media and wipe up residual moisture with clean lint-free cloths. Collect, contain, and dispose of all wash media, residues, and cleaning materials in accordance with all Federal, state, and local regulations.

3.3.3 Inspection. The Contractor must visually inspect all interior surfaces, including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Submit a CFR including the following, as applicable:

- Structural condition.
- Inaccessible areas, if any.
- Condition of coating, including measurements taken, percentage, location, and type of coating failure.
- Tank level indicator (TLI) and/or float switch condition.
- Sounding tube and striker plate condition.
- Suction and discharge piping condition.

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- Fastener material and condition.

3.4 Closing. The Contractor must ensure that the compartment(s) remain open for approximately 24 hours after completion of the tasks specified above. Notify the COR at least 24 hours prior to closing the compartment(s). After satisfactory inspection by the Coast Guard Inspector, and completion of all authorized repairs, close the manhole cover(s) with new gasket material conforming to ASTM D1330 and cotton grommets on the studs (as applicable). The Contractor must renew up to 10% of missing or damaged nuts and washers.

### **NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.5 Operational test, post repairs. After completion of work and in the presence of the Coast Guard inspector, the Contractor must thoroughly test and demonstrate the TLI's for tanks listed in paragraph 1.1 (Intent), to be in satisfactory operating condition. Submit a CFR.

## **4. NOTES**

This section is not applicable to this work item.

## WORK ITEM 3: Tanks, Dirty Oil and Waste, Clean and Inspect

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the following tank(s):

**TABLE 1 – TANKS**

TYPE OF TANK	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)
Oily Water	3-74-0-F	937	28
Waste Oil	3-77-0-F	586	18

1.2 Government-furnished property.

None.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet Of General Plans

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020,  
 General Requirements

#### OTHER REFERENCES

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) C6183, 2019,  
 Cork and Rubber Composition Sheet; For Aromatic Fuel And Oil Resistant Gaskets

### 3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 The Contractor must remove up to a total of 100 gallons of waste oil and oily water, to facilitate gas-freeing. Dispose of removed fluids in accordance with all applicable Federal, state, and local regulations.

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.3 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard Personnel perform an initial operational test of the equipment listed below to demonstrate existing operational condition. Submit a CFR.

- TLI's for tank(s) listed in paragraph 1.1 (Intent)

3.4 Plug log. The Contractor must keep a written record of all plugs put in any tank vents. A separate list must be kept for each tank being entered.

3.4.1 Ensure that all plugs are removed from each tank upon completion of work in the tank.

3.4.2 Ensure the plug log is available to the Coast Guard inspector when the inspector is performing his close-out inspection on each tank.

**NOTE**

**Vessel may come in with less tank fluid contents than specified above.**

3.5 Cleaning requirements. The Contractor must remove tank cover(s) and clean tank interior surfaces free of all foreign materials, such as sediment or sludge, taking care not to damage the coating system (if applicable). Use Coast Guard Drawing 175 WLM 601-003 for guidance. Remove cleaning media and residues continuously during the washing process. Remove any residual wash media; and wipe up residual moisture with clean lint-free cloths.

3.6 Tank content and waste disposal. The Contractor must dispose of tank contents and all cleaning fluids in compliance with all applicable Federal, state, and local laws, ordinances and regulations. Document a

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complete chain of custody record of the removed tank contents and generated wastes, from the vessel to the point of final destination or delivery. Submit document to the COR upon completion of work.

3.7 Inspection. The Contractor must visually inspect all tank interior surfaces, including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Complete the “Tank and Void Assessment Form” (found in the Work Item titled “General Requirements”) and submit via CFR. Electronic PDF version of this form will be furnished by the COR upon request. Include the following, as applicable:

- Tank structural condition.
- Inaccessible areas.
- Condition of tank coating, including measurements taken, percentage, location, and type of coating failure.
- Tank level indicator (TLI) and/or float switch condition.
- Sounding tube and striker plate condition.
- Suction and discharge piping condition.
- Fastener material and condition (correct fastener material is stainless steel).

3.8 Tank closing. The Contractor must ensure that the tank(s) remain open for at least 24 hours after completion of all authorized repair and preservation procedures. Notify the COR at least 24 hours prior to closing the tank(s) and ensure tank closure is accomplished in the presence of the Coast Guard Inspector. After satisfactory inspection by the Coast Guard Inspector and completion of all authorized repairs, close tank manhole cover(s) with new gasket material conforming to AMS-C-6183.

### **NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.9 Operational test, post repairs. After completion of work and in the presence of the Coast Guard Inspector, the Contractor must thoroughly test and demonstrate the equipment listed below to be in satisfactory operating condition. Submit a CFR.

- TLI’s for tank listed in paragraph 1.1 (Intent)

## **4. NOTES**

4.1 The Coast Guard Inspector will visually inspect the tank interior immediately prior to closing.

## **WORK ITEM 4: Ship Service Diesel Generator, SSDG, Exhaust Piping, Commercial Clean**

### **1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to clean the exhaust piping system for the following diesel generators: #1 SSDG, #2 SSDG, #3 SSDG.

1.2 Government-furnished property.

None.

### **2. REFERENCES**

#### **COAST GUARD DRAWINGS**

Coast Guard Drawing 175 WLM 259-001, Rev A, Combustion Exhaust Diagram

Coast Guard Drawing 175 WLM 259-005, Rev C, Combustion Exhaust A&D, Hull Block 970

#### **COAST GUARD PUBLICATIONS**

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2020, Temporary Hull Accesses

#### **OTHER REFERENCES**

Code of Federal Regulations (CFR) Title 29, Part 1915, 2022, Occupational Safety and Health Standards for Shipyard Employment

### **3. REQUIREMENTS**

3.1 General.

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3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Access covers
- Exhaust stack
- SSDG
- Vent ducting
- Wiring
- Exhaust pipe expansion joints
- Exhaust insulation blankets

3.2 Staging or scaffolding. The Contractor must erect suitable staging or scaffolding in accordance with 29 CFR 1915, Subpart E (Scaffolds, Ladders and Other Working Surfaces) to facilitate work, as required.

3.3 Safety precaution. The Contractor must rig suitable safety netting, to protect workers during possible falls, and to protect the Engine Room and machinery from falling tools.

3.3.1 Temporary safety railing. To promote safety, the Contractor must limit existing safety railing removals to an area where new safety railing can be installed during the same workday. During periods when not actively working on new safety railing, secure any gaps between existing safety railing with a substantial temporary lifeline arrangement similar to that currently installed on the vessel. Remove and dispose of all temporary lifelines upon completion of work.

3.4 Work plan. The Contractor must develop and submit to the COR, a plan for collecting and disposing of waste extracted during cleaning process. Ensure that the proposed plan must detail how and where exhaust piping will be disconnected, how entire length of exhaust piping will be divided/sectioned for cleaning, and precautions to protect the SSDG. The Contractor must perform this work upon receiving Coast Guard approval of the plan.

3.4.1 Due to limited access to work areas, the Contractor may, with express permission of the KO (via submission of a CFR), cut access holes to facilitate accomplishment of the work specified herein. Perform all work required to open and close the access openings in accordance with SFLC Std Spec 8636.

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

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3.5 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard personnel perform an initial operational test of the exhaust piping system, to demonstrate existing operational condition. Submit a CFR.

3.6 Cleaning. The Contractor must clean the interior surfaces of the exhaust piping and stack uptakes to the SSDG, shown on Coast Guard Drawing(s) 175 WLM 259-001 and 175 WLM 259-005, to a condition free from soot, tar, and any other foreign matter as follows:

3.6.1 Disconnect the exhaust piping as necessary to facilitate cleaning.

3.6.2 Thoroughly sweep, mechanically clean, and vacuum the interior of each exhaust pipe system, including the mufflers, from the exhaust outlet to the topmost location outside the vessel. Clean all adjacent stack uptake surfaces. Ensure that all tar deposits, soot deposits, and all other surface contaminants are removed.

3.6.3 Remove all debris from the pipe surfaces, stack deck, and Engine Room areas by vacuuming. Dispose of all cleaning materials and generated debris in accordance with all applicable Federal, state, and local regulations.

3.6.4 Reassemble exhaust piping; renew all disturbed flange connection gaskets with suitable high temperature, non-asbestos-containing gasket materials; and renew all disturbed fasteners.

3.7 Inspection and report. The Contractor must perform a visual inspection of the following components: submit a CFR:

- Exhaust stack access hatches, including all associated studs and nuts.
- All cleaned exhaust stack surfaces.
- All exhaust expansion joints, including associated bolts.

3.7.1 Following cleaning of the interior of each exhaust pipe system, the Contractor must demonstrate completeness of the cleaning process to the Coast Guard Inspector, showing that the entire length of exhaust piping has been cleaned according to the work plan.

3.8 Touch-up preservation. The Contractor must prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.9 Operational test, post repairs. After completion of work, the Contractor must thoroughly test, in the presence of the Coast Guard Inspector and demonstrate the exhaust piping system to be in satisfactory operating condition. Submit a CFR

**4. NOTES**

This section is not applicable to this work item.

## **WORK ITEM 5: Vent Ducts, Engine And Motor Room, All, Commercial Cleaning**

### **1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the designated shipboard ventilation systems.

1.2 Government-furnished property.

None.

### **2. REFERENCES**

#### **COAST GUARD DRAWINGS**

Coast Guard Drawing 175 WLM 512-001, Rev E, HVAC Diagram

#### **COAST GUARD PUBLICATIONS**

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020,  
General Requirements

Surface Forces Logistics Center Standard Specification 5100 (SFLC Std Spec 5100), 2020, Clean  
Shipboard Ventilation Systems

#### **OTHER REFERENCES**

None

### **3. REQUIREMENTS**

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

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Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.3.1 Install filter medium at the terminal ends of all supply vent ducting to prevent any residual foreign mater from blowing into the engine room spaces.

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Ducting screens.
- Electric pre-heaters.
- Hot/Chill water coils.
- Overhead sheathing/panels.
- Ventilation covers.

**NOTE**  
**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.2 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard personnel perform an initial operational test of the ventilation systems included in this work item, to demonstrate existing operational condition. Submit a CFR.

3.3 Cleaning requirements. The Contractor must clean and inspect the following ventilation systems, shown on Coast Guard Drawing 175 WLM 512-001, in accordance with SFLC Std Spec 5100. Submit a CFR.

**TABLE 1 – ENGINE ROOM**

SYSTEM LOCATION	TYPE	SYSTEM NO.
Engine room	Supply	S1-71-1
Engine room	Exhaust	E03-76-1

3.3.1 The Contractor must clean the exhaust ventilation ducting up to and including the discharge of the engine room exhaust fans. The Contractor is not expected to clean the exhaust stack plenum area.

**NOTE**  
**Past experience has shown that the engine room exhaust ventilation systems have accumulated oils and greases and systems are coated with a very sticky and very thick sludge. Take this into consideration in the bid.**

3.3.2 Disassemble the exhaust system as required to clean all sections of the exhaust system.

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3.3.2.1 After cleaning, reassemble vent ducting using new gaskets and fasteners.

3.3.3 Prior to reassembling the vent systems, visually inspect the systems in the presence of the Coast Guard Inspector. Verify that the vent systems are clean and oil and build up free. The Contractor must use video probe equipment to allow viewing the internal surfaces of all vent ducting.

3.4 Notification. The Contractor must give written notification to the COR 48 hours before starting ventilation cleaning work.

### NOTE

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.5 Operational test, post repairs. After completion of work, the Contractor must thoroughly test, in the presence of the Coast Guard Inspector and demonstrate the ventilation systems disturbed to be in satisfactory operating condition. Submit a CFR.

## 4. NOTES

This section is not applicable to this work item.

## **WORK ITEM 6: Vent Ducts, Galley and Pantry Room, All, Commercial Cleaning**

### **1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the designated shipboard ventilation systems.

1.2 Government-furnished property.

None.

### **2. REFERENCES**

#### **COAST GUARD DRAWINGS**

Coast Guard Drawing 175 WLM 512-001, Rev E, HVAC Diagram

#### **COAST GUARD PUBLICATIONS**

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020,  
General Requirements

Surface Forces Logistics Center Standard Specification 5100 (SFLC Std Spec 5100), 2020, Clean  
Shipboard Ventilation Systems

#### **OTHER REFERENCES**

None

### **3. REQUIREMENTS**

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

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Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Ducting screens.
- Electric pre-heaters.
- Hot/Chill water coils.
- Overhead sheathing/panels.
- Ventilation covers..

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.2 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard Personnel perform an initial operational test of the ventilation systems included in this work item, to demonstrate existing operational condition. Submit a CFR.

**NOTE**

**It is recommended that the Contractor conduct a ship check to verify dimensions in the table below.**

3.3 Cleaning requirements. The Contractor must clean and inspect the following ventilation systems, shown on Coast Guard Drawing 175 WLM 512-001, in accordance with SFLC Std Spec 5100. Submit a CFR.

**TABLE – 1 SYSTEM LOCATION**

<b>SYSTEM LOCATION</b>	<b>TYPE</b>	<b>SYSTEM NO.</b>
Galley	Supply	S01-52-0
Gaylord hood	Exhaust	E02-68-2

3.4 Additional requirements. In addition to the above, the Contractor must accomplish the following:

3.4.1 Notification. Give written notification to the COR, 48 hours before starting ventilation cleaning work.

3.4.2 Additional protective covering. In addition to providing protective covering as specified in SFLC Std Spec 5100, subsection 3.1.3 (Protective measures), provide additional protective covering for all food preparation and serving surfaces in the immediate work area, as applicable, to prevent contamination.

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3.4.3 Avoidance of meal preparation and service. Ensure that cleaning of galley ventilation systems is scheduled between 1900 and 0530 so that it WILL NOT interfere with meal preparation and service.

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.5 Operational test, post repairs. After completion of work, the Contractor must thoroughly test, in the presence of the Coast Guard Inspector and demonstrate the ventilation systems included in this work item to be in satisfactory operating condition. Submit a CFR.

#### **4. NOTES**

This section is not applicable to this work item.

## WORK ITEM 7: Vent Ducts, Laundry Exhaust, Commercial Cleaning

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the designated shipboard ventilation systems.

1.2 Government-furnished property.

None.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 512-001, Rev E, HVAC Diagram

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 5100 (SFLC Std Spec 5100), 2020, Clean Shipboard Ventilation Systems

#### OTHER REFERENCES

None

### 3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Ducting screens.
- Electric pre-heaters.
- Hot/Chill water coils.
- Overhead sheathing/panels.
- Ventilation covers..

**NOTE**  
**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.2 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard Personnel perform an initial operational test of the ventilation systems included in this work item, to demonstrate existing operational condition. Submit a CFR.

3.3 Cleaning requirements. The Contractor must clean and inspect the following ventilation systems, shown on Coast Guard Drawing 175 WLM 512-001, in accordance with SFLC Std Spec 5100. Submit a CFR.

**TABLE 1 – SYSTEM LOCATIONS**

SYSTEM LOCATION	TYPE	SYSTEM NO.
Laundry room	Exhaust	E01-52-1

3.4 Notification. The Contractor must give written notification to the COR, 48 hours before starting ventilation cleaning work.

**NOTE**  
**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.5 Operational test, post repairs. After completion of work, the Contractor must thoroughly test, in the presence of the Coast Guard Inspector and demonstrate the ventilation systems included in this work item to be in satisfactory operating condition. Submit a CFR.

#### 4. NOTES

This section is not applicable to this work item.

## **WORK ITEM 8: Vent Ducts, All Other, Commercial Cleaning**

### **1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the designated shipboard ventilation systems.

1.2 Government-furnished property.

None.

### **2. REFERENCES**

#### **COAST GUARD DRAWINGS**

Coast Guard Drawing 175 WLM 512-001, Rev E, HVAC Diagram

#### **COAST GUARD PUBLICATIONS**

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 5100 (SFLC Std Spec 5100), 2020, Clean Shipboard Ventilation Systems

#### **OTHER REFERENCES**

None

### **3. REQUIREMENTS**

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to:

- Ducting screens.
- Electric pre-heaters.
- Hot/Chill water coils.
- Overhead sheathing/panels.
- Ventilation covers.

**NOTE**  
**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.2 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard Personnel perform an initial operational test of the ventilation systems included in this work item, to demonstrate existing operational condition. Submit a CFR.

3.3 Cleaning requirements. The Contractor must clean and inspect the following ventilation systems, shown on Coast Guard Drawing 175 WLM 512-001, in accordance with SFLC Std Spec 5100. Submit a CFR.

**TABLE 1 – SYSTEM LOCATIONS**

FAN	SERVING	LOCATION
AH1	Pilot House, Chart Room	02-52-2-Q
AH2	01 Deck	02-52-1-Q
FC1	Ecc	2-52-0-C
FC2	Ships Office	1-52-2-Q
FC2	Eng Log Office	1-57-2-Q
FC3	Messdeck	1-61-0-L
FC4	Crew Sf	1-79-2-L
FC4	Crew Sr	1-79-3-L
F5	Fr 15 Fwd	1-10-0-Q
F6	Bow Thruster	3-6-0-E
F7	Hyd Equip Room	3-15-0-E
F8	Cargo Hold	3-15-0-E
F9	Machine Shop, Eng Strm, Pot Water Equip Rm	3-42-0-Q

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F10	Em Shop	01-51-0-Q
F11	Pump Room	3-79-0-E
F12	Z-Drive	3-88-0-E
F13	Aton Shop Ext Hood	1-10-0-Q
F17	Md Dk OASupply	01-51-0-Q
F18	Md Dk Exh	01-51-0-Q
F19	01 Deck Exh	02-52-1-Q
F20	Storeroom	3-35-4-A

3.4 Notification. The Contractor must give written notification to the COR, 48 hours before starting ventilation cleaning work.

**NOTE**  
**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.5 Operational test, post repairs. After completion of work, the Contractor must thoroughly test, in the presence of the Coast Guard Inspector and demonstrate the ventilation systems included in this work item to be in satisfactory operating condition. Submit a CFR.

#### 4. NOTES

This section is not applicable to this work item.

## WORK ITEM 9: Hot Water Accumulator Tanks, Clean and Inspect

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the following hot water tank(s):

SERVICE	LOCATION	CAPACITY (GALLONS)	PRESSURE (PSIG)
Hot Water Accumulator	3-42-1-E	90	150

1.2 Government-furnished property.

None.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 533-001, Rev G, Potable Water System Diagram

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

#### OTHER REFERENCES

ASTM International (ASTM) D1330, 2010 Standard Specification for Rubber Sheet Gaskets

American National Standards Institute/American Water Works Association (ANSI/AWWA) C652, 2011, Disinfection of Water-Storage Facilities

### 3. REQUIREMENTS

#### 3.1 General.

##### 3.1.1 CIR.

None.

##### 3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to:

- Piping

3.2 Plug log. The Contractor must keep a written record of all plugs put in any tanks vents. A separate list must be kept for each tank being entered.

3.2.1.1 Ensure that all plugs are removed from each tank upon completion of work in the tank.

3.2.1.2 The plug log must be available to the Coast Guard inspector when the inspector is performing his close-out inspection on each tank.

3.3 Preparation. The Contractor must depressurize and drain the designated tank(s) (see paragraph 1.1 (Intent)) before performing any work on them. Dispose of all fluids in accordance with federal, state, and local environmental regulations.

3.4 Hot water tank(s) inspection. The Contractor must accomplish the following for the designated tank(s) (see paragraph 1.1 (Intent)) and associated heaters, using Coast Guard Drawing 175 WLM 533-001 for guidance:

3.4.1 Visual inspection. Clean and visually inspect the internal and external surfaces of each tank for signs of corrosion, pitting, and other damage. Submit a CFR.

3.4.2 Tanks with steam heater tubes. Remove the hot water accumulator tank heaters from the vessel to a suitable repair facility.

3.4.2.1 Clean and visually inspect all heater surfaces.

3.4.2.2 Hydrostatically test steam heater tubes to 135 percent of the system design pressure in accordance with manufacturer's instructions and SFLC Std Spec 0740, Appendix C, "Hydrostatic Test". Hold test for 15 minutes using clean, fresh water and inspect for leaks. Ensure zero leakage from or permanent deformation of pressure-containing parts by repairing all leaks, deformations, and discrepancies. Submit a CFR. Do not exceed manufacturer's recommended test pressure.

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3.4.3 Tanks with electrical heating elements. Clean and visually inspect the hot water accumulator tank heaters. Test the electrical resistance and heat conductivity of the heaters. Submit a CFR.

3.5 Tank preservation. If a Change Request has been authorized and released, prepare and coat each tank's interior surfaces using the system specified for "Tanks and Voids (Potable Water Tanks)" in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). If preservation is for less than 100 percent of tank interior surfaces, power tool clean all affected surfaces to "bare metal" in lieu of using abrasive blasting, and feather edges of existing intact coating to the prepared areas in order to provide a smooth transition with the new paint. Do not drain any fluids (including fresh water) into any space, bilge or exterior location.

3.6 Reinstallation. After all authorized repairs, reinstall the hot water accumulator tank heater(s) to their original configuration with new rubber gaskets conforming to ASTM D1330. Renew all stainless steel fasteners.

3.7 Leak test. After tank reinstallation and completion of all mechanical (i.e. threaded, bolted, etc.) connections, the Contractor must test the potable water system's operation using the system fluid at normal operating pressure. Ensure zero visible leakage from or deformation of mechanical parts by repairing all leaks and discrepancies. Submit a CFR.

3.8 Tank disinfecting. After all other work involving the potable water system and tank closing have been completed, the Contractor must disinfect and treat the affected potable water tank(s), as necessary to meet or exceed the requirements of AWWA C652. After tank disinfecting, remove and dispose of all treated water in accordance with all Federal, state and local regulations. Ensure that no one enters the tanks once disinfection is completed.

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.9 Operational test, post repairs. After completion of work, the Contractor must thoroughly test, in the presence of the Coast Guard Inspector and demonstrate all items or shipboard devices that have been disturbed, used, repaired, altered, or installed to be in satisfactory operating condition. Submit a CFR.

#### **4. NOTES**

This section is not applicable to this work item.

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**WORK ITEM 10: Compressed Air Receivers and System Valves, All, Clean, Inspect, Hydro and Lift**

**1. SCOPE**

1.1 Intent. The work item describes the requirements for the Contractor to clean, inspect, lift test and hydrostatically test the below designated air receivers and system valves:

SERVICE	DESIGNATION	LOCATION	QTY	OPERATING PRESSURE (psi)
Ship's Service		3-61-0-E	2	250
Ship's Whistle		3-61-0-E	1	140

TYPE	SIZE	DESIGNATION	QTY	SET PRESSURE (psi)
Relief	1-½"	V13-1	1	155
Relief	1-½"	V13-2	1	155
Relief	½"	V41-1	1	155
Relief	½"	V41-2	1	155
Relief	½"	V60-1	1	40
Relief	½"	V60-2	1	40
Relief	½"	V61-1	1	275
Relief	½"	V61-2	1	275
Relief	½"	V61-3	1	275
Relief	½"	V61-4	1	275
Reducing	¾"	V43-1	1	250-125
Reducing	1-½"	V44-1	1	250-125
Reducing	1 ½"	V44-2	1	250-125

1.2 Government-furnished property.

None.

## 2. REFERENCES

### COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 551-001, Rev J, Compressed Air System Diagram

### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

### OTHER REFERENCES

American Society of Mechanical Engineers (ASME) B16.34, 2017, Valves-Flanged, Threaded, and Welding End

American Society for Testing and Materials (ASTM) International F1508, 2016, Standard Specification for Angle Style, Pressure Relief Valves for Steam, Gas, and Liquid Services

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-61, 2019 Edition, Pressure Testing Of Valves

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-67, 2017 Edition, Butterfly Valves

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-72, 2010 Edition, Ball Valves with Flanged or Butt-Welding Ends for General Service

Manufacturers' Standardization Society of the Valve and Fittings Industry (MSS) SP-80, 2019 Edition, Bronze Gate, Globe, Angle and Check Valves

## 3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Piping system.

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.1.5 Operational test - initial. Prior to commencement of work, the Contractor must witness Coast Guard personnel perform an initial operational test of the compressed air system, to demonstrate existing operational condition. Submit a CFR.

3.2 Air receiver cleaning and inspection. The Contractor must clean and inspect each designated air receiver in paragraph 1.1 (Intent) as follows.

3.2.1 Blowdown the air receivers and collect the blowdown (condensate) into a separate container for inspection.

3.2.2 Visually inspect the blowdown (condensate) under a bright white light for oil or particulate contamination. Clean and visually inspect the internal and external surfaces of the air receiver for signs of corrosion, pitting, and other damage. Submit a CFR.

3.3 Hydrostatic test. The Contractor must perform a hydrostatic test of the designated air receiver(s) in accordance with SFLC Std Spec 0740, Appendix C and manufacturer's recommended procedures. In the event a test pressure is not listed on the applicable drawing, test to 1-1/2 times the nominal operating pressure and hold for five minutes. Refer to Coast Guard Drawing 175 WLM 551-001 for guidance. Submit a CFR.

3.3.1 To hydrostatic test, isolate the air receiver by disconnecting all piping, relief valves, and pressure switches. Install pipe plugs/caps, to prevent backflow into compressors and other system components.

3.3.2 Hydrostatically test the air receiver(s) using clean fresh water. Ensure zero leakage from or permanent deformation of pressure-containing parts by repairing all leaks, deformations, and discrepancies.

3.3.3 Instruments and equipment that might be damaged by clean fresh water must be excluded from hydrostatic pressure test.

3.3.4 After testing, drain and thoroughly dry the air receivers with warm air. Dispose of testing fluids in accordance with all applicable Federal, state, and local regulations. Reconnect all disconnected piping and restore system. Renew any disturbed gaskets.

**WARNING**

**Do not drain any fluids, including fresh water, into any space, bilge, or exterior location.**

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3.4 Contractor’s option for valve renewal. The Contractor may, at no additional cost to the Government, opt to renew valves designated for inspection and testing if preferable for the Contractor. If the Contractor elects to renew valves, the Contractor must ensure the following:

- New valves are commercial-standard type valves, conforming to the applicable standard listed in Table 1(Valve Standards).
- New valves must be equivalent (including identical material) to the valve being renewed.

**TABLE 1 - VALVE STANDARDS**

<b>VALVE TYPE</b>	<b>INDUSTRY STANDARD</b>
Steel Valves	MSS SP-61
Butterfly Valve	MSS SP-67
Ball Valves, Flanged or Butt-Welded Ends	MSS SP-72
Bronze Gate, Globe, Angle and Check Valves	MSS SP-80
Angle Style. Pressure Relief Valves	ASTM F1508
All others	ASME B16.34

3.4.1 Visually inspect the piping and mounting arrangements; and submit a CFR detailing any required modifications to accommodate the new valve(s).

3.4.2 Provide original documentation to the COR certifying each valve has been satisfactorily shop-tested. Documentation must include the set pressure, date of inspection / test, and testing facility.

3.5 Valve inspection and testing. The Contractor must inspect and test each designated air system valve as follows. Refer to Coast Guard Drawing 175 WLM 551-001 for guidance.

3.5.1 Relief valves. Disassemble as required, and visually inspect all parts for defects and deterioration. Submit a CFR.

3.5.1.1 Perform a lifting test on each relief valve in accordance with manufacturer’s recommendations and ASME PTC 25. Ensure that each valve seats cleanly after pressure relief (without simmering), and with no allowable leakage.

3.5.1.2 Adjust the relief pressure on the designated relief valve as necessary to obtain the specified lifting pressure. After adjustment, perform a final check to confirm each relief valve’s lifting pressure in the presence of the Coast Guard Inspector. After successful confirmation, install the relief valves. Renew all O-rings and gaskets. Submit a CFR.

3.5.2 Pressure reducing valves. Disassemble as required, and visually inspect all parts for defects and deterioration. Submit a CFR.

3.5.2.1 Adjust the setting on the designated reducing valve as necessary to obtain the specified pressure setting.

3.5.2.2 After adjustment, perform a final check to confirm each reducing valve’s ability to maintain set pressure in the presence of the Coast Guard Inspector. After successful confirmation, install the pressure reducing valves. Renew all O-rings and gaskets. Submit a CFR.

3.6 Valve reinstallation/installation. Upon completion of all authorized work, the Contractor must accomplish the following:

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- Remove and dispose of all blank flanges and associated gaskets.
- Reinstall/install all overhauled and new valves with new gaskets.
- Renew all missing or damaged valve label plates.
- Renew all bolting hardware.

3.7 Touch-up preservation, general. The Contractor must prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

3.8 Data plates- valve. The Contractor must affix an anodized aluminum test data plate with lock wire to each valve. The data plate must be engraved with ¼-inch high letters, stating the following:

- Valve number / designation
- Set pressure (if applicable)
- Date of inspection / test.

3.9 Documentation. The Contractor must provide documentation to the Coast Guard Inspector certifying each valve tested. Documentation must include the valve number / designation, set pressure, date of inspection / test, and testing facility.

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.10 Operational test – post repairs. After completion of work, the Contractor must thoroughly test, in the presence of the Coast Guard Inspector and demonstrate the compressed air system to be in satisfactory operating condition. Submit a CFR.

3.11 Surface preservation. The Contractor must prepare and coat the receiver exterior surfaces, using the system specified for “Machinery, Operating Temperatures Under 200 °F” in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top coat color to match previous paint scheme.

3.12 Data plates- air receiver. The Contractor must affix an anodized aluminum test data plate with epoxy resin cement to each air receiver. The data plate must be engraved with ¼-inch high letters, stating the following:

- Receiver name / number.
- Hydrostatic test pressure (if applicable).
- Date of inspection / test.
- Testing facility.

3.13 Documentation. The Contractor must provide documentation to the Coast Guard Inspector certifying each air receiver tested. Documentation must include the receiver name / number, method of testing, hydrostatic test pressure (if applicable), date of inspection / test, and testing facility.

#### **4. NOTES**

4.1 Air receiver definition. An air receiver is a pressure vessel for the storage of air at 600 psig and below.

## WORK ITEM 11: Sewage Holding Tanks, Clean and Inspect

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the following tank(s):

**TABLE 1 – TANKS**

TYPE OF TANK	LOCATION	CAPACITY - 95% (Gallons)	LOW SUCTION (Gallons)
Sewage Holding Tank	2-84-2-W	847	200
Vacuum Collection Tank	2-82-2-W	330	20

1.2 Government-furnished property.

None.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

- Coast Guard Drawing 175 WLM 506-001, Rev G, Overflows, Air Escapes & Sounding Tubes Diagram
- Coast Guard Drawing 175 WLM-528-001, Rev E, Plumbing and Interior Deck Drains Diagram
- Coast Guard Drawing 175 WLM 593-001, Rev G, Sewage & Waste Water System Diagram
- Coast Guard Drawing 175 WLM 593-009, Rev E, Independent Tanks, Sewage Holding Tank
- Coast Guard Drawing 175 WLM 633-001, Rev D, Cathodic Protection

#### COAST GUARD PUBLICATIONS

- Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

#### OTHER REFERENCES

- ASTM International (ASTM) D1330, 2015, Standard Specification for Rubber Sheet Gaskets

### 3. REQUIREMENTS

#### 3.1 General.

##### 3.1.1 CIR.

None.

##### 3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.3.1 Plug all inlet and outlet piping in the tank(s) to prevent contaminants from entering. Use plugs with an attached lanyard, ring or other system that will ensure plugs are not lost in the pipe openings.

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Piping.
- Pump(s).
- Zincs.

3.2 Plug log. The Contractor must keep a written record of all plugs put in any tank vents. A separate list must be kept for each tank being entered.

3.2.1 Ensure that all plugs are removed from each tank upon completion of work in the tank.

3.2.2 The plug log must be available to the Coast Guard Inspector when the inspector is performing his close-out inspection on each tank.

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.4 Operational test - initial. Prior to commencement of work, the Contractor must witness Coast Guard personnel perform an initial operational test of all items or shipboard devices to be disturbed, used, repaired, or altered, to demonstrate existing operational condition. Submit a CFR.

3.4 Service disruption. When sewage collection service is disrupted due to contractor repairs, the Contractor must refer to SFLC Standard Spec 0000 par 3.2.11 to provide required temporary facilities.

3.5 Cleaning and inspection requirements. The Contractor must accomplish the following for the tank(s) listed in paragraph 1.1 (Intent), referring to Coast Guard drawings 175 WLM 593-001, 175 WLM 593-009, 175 WLM 506-001, 175 WLM 528-001, 175 WLM 633-001, and Tech Pub 3611 Manufacturers Instruction Book, SWBS Group 202, Section A for guidance:

3.5.1 Content removal. Remove and dispose of all contents, fluids, and/or residues in accordance with all applicable Federal, state, and local regulations

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3.5.2 Cleaning requirements. Remove manhole cover(s). Clean all tank structure's interior surfaces free of all foreign materials, sediment, and sludge. Remove all persistent residues, taking care not to damage the tank coating system. Remove cleaning media and residues continuously from the tank during the washing process. Remove any residual wash media and wipe up residual moisture with clean lint-free cloths. Collect, contain, and dispose of all wash media, residues, and cleaning materials in accordance with all Federal, state, and local regulations. Clean all tank vent lines. Remove and clean the eductors and level switches inside of the tank(s). Reinstall the eductors and level switches upon completion of tank cleaning. Use new gaskets and o-rings to install/reinstall all removed/disturbed components.

3.5.3 Inspection. Visually inspect all interior surfaces, including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Submit the "Tank and Void Assessment Form" via CFR (see paragraph 4.2 of the Work Item titled "General Requirements"). Electronic PDF version of this form will be furnished by the COR upon request. Include the following, as applicable:

- Tank structural condition.
- Inaccessible areas.
- Condition of tank coating, including measurements, percentage, location, and type of coating failure (not applicable for stainless steel tanks).
- Tank level indicator (TLI), vacuum and/or float switch condition.
- Suction and discharge piping and vent line condition.
- Fastener material (stainless steel) and condition.
- Zinc anode condition (remaining percentage).

3.5.4 Control panel assembly. Open and vacuum clean the control panel assembly. Inspect the control panel assembly for any indications of overheating or loose wiring or connections. Submit a CFR

3.6 Closing. The Contractor must notify the COR at least 24 hours prior to closing the tank(s) and ensure tank closure is accomplished in the presence of the Coast Guard Inspector. After satisfactory inspection by the Coast Guard Inspector, and completion of all authorized repairs, close the manhole cover(s) with new gasket material conforming to ASTM D1330.

3.6.1 The Contractor must renew up to 10% of nuts and washers.

### NOTE

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.7 Operational test, post repairs. After completion of work, the Contractor must accomplish the following in the presence of the Coast Guard Inspector, and submit a CFR:

3.7.1 Adjust the set point on each of the vacuum pressure switches (as applicable) to the set points noted previously.

3.7.2 Verify operation of the low and high level switches/alarms and that the pumps cycle from lead to lag status during operation. Demonstrate proper operation of tank TLIs to prove satisfactory operating condition.

3.7.3 Upon completion of testing and, in the presence of the Coast Guard Inspector, pump tank(s) to the limit of the ship's installed pumps.

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**4. NOTES**

4.1 Vessel equipment. The cutter is equipped with an ENVIROVAC Model 1122 Vacuum Sewage System. The vacuum tank is made of 316L stainless steel. The sewage collection tank is equipped with two (2) magnetic level switches, two (2) vacuum pressure switches, two (2) sewage ejectors, two (2) solenoid operated ball valves, and other associated components. (Ships with hull numbers 551 through 558 use a mercury float level sensor switch.) Point of contact for the system is listed below.

ENVIROVAC Inc.

1260 Turret Dr.

Rockford IL. 6115-1486

(815) 654-8300

4.2 Eductor seal information.

Ref. No.	Part Number	Description	Qty Per Assembly	Total Quantity
2	5500020-005	O-ring	1	2
3	5500033-002	Gasket, Ring, 125 x 100 x 2mm	1	2
4	5500033-001	Gasket, Ring, 135 x 90 x 2mm	2	4
5	5600032	Nozzle, 45mm	1	2

4.3 Sewage Holding tank data. The sewage holding tank is described in Coast Guard Drawing 175 WLM 593-009. The sewage holding tank has two (2) type ZHS-42 stud mounted zincs installed inside of the tank, as described in Coast Guard Drawing 175 WLM 633-001 and is fitted with a manual internal wash down system and a tank level indicating system as well as high level and low level alarms and pump controls. The sewage tank is vented on top of the stack as shown in Coast Guard Drawing 175 WLM 506-001.

## WORK ITEM 12: Sewage Piping, Clean and Flush

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean the sewage piping system.

1.2 Government-furnished property.

None.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 593-001, Rev G, Sewage and Waste Water System Diagram

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

#### OTHER REFERENCES

ASTM International (ASTM) D1330, 2010, Standard Specification for Rubber Sheet Gaskets

### 3. REQUIREMENTS:

3.1 General. The Contractor shall clean and flush approximately 500 linear feet of sewage system piping, shown on Coast Guard Drawing 175 WLM 593-001.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Sewage pumps
- Toilets

3.2 Contamination prevention. The Contractor must take all precautions to prevent contamination of personnel and spaces in accordance with all applicable Federal, state, and local regulations.

3.3 Personnel qualification. The Contractor must ensure that personnel accomplishing this work are qualified and experienced in operating the pressurized water system and handling the chemicals. For each operator/cleaning technician, submit documentation of applicable experience and training obtained within the last twelve months along with the Cleaning Plan.

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.4 Operational test - initial. Prior to commencement of work, the Contractor must witness Coast Guard personnel perform an initial operational test of all items or shipboard devices to be disturbed, used, repaired, or altered, to demonstrate existing operational condition. Submit a CFR.

3.5 Cleaning plan. Submit the written plan for chemical cleaning to the COR for approval 96 hours before work is to commence. The procedure must include products to be used, safety precautions, disposal requirements, sequence of events, etc. Submit a MSDS to the COR for all chemicals proposed for use. Changes to the chemical cleaning plan as written, need to be approved by the COR (and Facilities).

**CAUTION**

**Although the Coast Guard prefers pressurized water as the cleaning fluid, the Contractor may propose chemical cleaning as an alternative, providing that the proposed chemical cleaning agent is environmentally safe, suitable for use in marine sewage piping application, and pre-approved by the COR.**

**The chemicals used in the cleaning (including cleaning chemicals, neutralizing compounds, and defoaming chemicals) must not cause any significant detrimental effects to the sewage piping system or any other system components Due to the fact that system piping has historically been difficult to clean by pressure washing only, chemical cleaning is usually required to successfully complete the cleaning process.**

3.5.1 Procedure requirements. The Contractor must ensure that the procedure includes the following:

- Methods of cleaning.
- All safety precautions required during cleaning operations.
- List of qualified personnel who will operate machinery or handle chemicals (see paragraph 3.3 (Personnel qualification) herein).
- Locations in the sewage piping where cleaning will take place, and any additional fittings necessary.
- Sequence of each location that ensures all piping sections will be cleaned and all foreign debris removed.

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3.5.2 Plan submittal. The Contractor must submit the written plan to the COR for approval at least 48 hours prior to commencing cleaning operations. Changes to the chemical cleaning plan as written, need to be approved by the COR (and local Facilities).

3.6 Clean and flush. The Contractor must clean and flush approximately 500 linear feet of sewage system piping, shown on Coast Guard Drawing 175 WLM 593-001.

3.6.1 Pumps and valves. Replace system tank valve(s) with temporary spool piece(s) before cleaning. Visually inspect system pumps and valve(s); and submit a CFR. Upon completion of work, reinstall the removed tank valve(s) with new gaskets.

3.6.2 Cleaning. Continue cleaning until all of the following conditions are met:

- All visible calcium carbonate deposits, solid deposits and build-up are removed from pipe walls.
- Discharge water from the piping being cleaned is free of all visible scale and deposits.

3.6.3 Inspect the piping interior using a borescope in the presence of the COR, to verify that all solid deposits visible to the unmagnified eye have been removed. Continue the cleaning process until all visible solid deposits are removed from the pipe walls.

3.6.4 Flush twice the volume of the system cleaned with water to include 3 repeated pH tests between 6 and 8. The flushing water shall be collected and disposed by the Contractor.

3.7 Waste disposal. The Contractor must dispose of all cleaning fluids and debris in accordance with all applicable Federal, state, and local regulations. Remove all unused chemicals from USCG property immediately upon completion of work item. Do not drain any fluids (including fresh water) into any space, bilge, or exterior location.

3.8 Gasket renewal. The Contractor must reinstall all removed valves and fittings with new gasket material conforming to ASTM D1330.

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.9 Operational test – post repairs. After completion of work, the Contractor must thoroughly test, in the presence of the Coast Guard Inspector and demonstrate all items or shipboard devices that have been disturbed, used, repaired, altered, or installed to be in satisfactory operating condition. Submit a CFR.

3.9.1 Leak test. After all system components are reinstalled, the Contractor must test all disturbed piping for leaks, as follows, and submit a CFR:

- Plug all system openings (except the highest) and fill system with water to the point of overflow. Ensure that the water level does not go down (without adding any water) for sufficient time to inspect the entire system (no less than 15 minutes).
- Closely monitor the system for leaks. Repair all leaks detected.
- Repeat test and inspection until no leaks are detected.

**4. NOTES**

This section is not applicable to this work item.

## WORK ITEM 13: Tanks (Sewage Holding), Preserve, 100 percent

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to prepare and preserve 100% of the following tank(s):

**TABLE 1 – TANKS**

TYPE OF TANK	LOCATION	CAPACITY - 95% (Gallons)	LOW SUCTION (Gallons)
Sewage Holding Tank	2-84-2-W	847	43
Vacuum Collection Tank	2-82-2-W	330	17

1.2 Government-furnished property.

None.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 506-001, Rev G, Overflows, Air Escapes & Sounding Tubes Diagram

Coast Guard Drawing 175 WLM-528-001, Rev E, Plumbing and Interior Deck Drains Diagram

Coast Guard Drawing 175 WLM 593-001, Rev G, Sewage & Waste Water System Diagram

Coast Guard Drawing 175 WLM 593-009, Rev E, Independent Tanks, Sewage Holding Tank

Coast Guard Drawing 175 WLM 633-001, Rev D, Cathodic Protection

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

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Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2020,  
Temporary Hull Accesses

### OTHER REFERENCES

None

### 3. REQUIREMENTS

3.1 General. The Contractor must refer to Coast Guard drawings 175 WLM 593-001, 175 WLM 593-009, 175 WLM 506-001, 175 WLM 528-001, 175 WLM 633-001, and Tech Pub 3611 Manufacturers Instruction Book, SWBS Group 202, Section A for guidance.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.3.1 The Contractor must plug all inlet and outlet piping in the tank(s) to prevent contaminants from entering. Use plugs with an attached lanyard, ring or other system that will ensure plugs are not lost in the pipe openings. Maintain a plug accountability log outside the tank to prevent any of the installed temporary plugs from being lost inside the tank or forgotten inside at tank closure. Submit this log to the COR after completion of work item.

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Piping.
- Pumps.
- TLI.
- Sewage ejector assembly.

3.2 Temporary access openings. Due to limited access to work areas, the Contractor may, with express permission of the KO (via submission of a CFR), cut access holes to facilitate accomplishment of the work specified herein. Perform all work required to open and close the access openings in accordance with SFLC Std Spec 8636.

#### NOTE

**Requirements for tank opening and closing, content disposal, and inspection are covered in the clean and inspect work items.**

3.3 Substrate inspection. After completion surface preparation and before coating application, the Contractor must perform a visual inspection of the prepared substrate, and submit a CFR.

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3.4 Surface preservation. The Contractor must accomplish the following tasks for the tanks listed in paragraph 1.1 (Intent):

3.4.1 Remove and retain the tank manhole cover(s). Remove the sewage ejector and bulkhead packing gland assembly.

3.4.2 Prepare and coat all (100%) tank interior surfaces (including internal surfaces of manhole cover(s), manhole cover hull ring(s) extending outward to the weld line that ties the hull ring into the tank plating on the tank exterior), using the system specified for "Tanks and Voids (Grey Water, Sewage, and CHT Tanks), Option II", in SFLC Std Spec 6310, Appendix B (Cutters and Boat Interior Paint Systems). Select finish/top-coat color to match existing.

3.4.3 Prepare and coat all manhole cover external surfaces to match existing adjacent surfaces, using the system specified for "Decks, Metal Interior and Non-Skid Areas (Metal Decks – No application of deck coverings)", in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top-coat color to match existing adjacent surfaces.

**NOTE**

**Surfaces being preserved are considered "critical-coated surfaces".**

3.5 In-process quality control measures. The Contractor must abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for "critical-coated surfaces). Surfaces being preserved are considered "critical-coated surfaces".

3.6 TLI. The Contractor must, upon completion of work, reinstall tank TLIs and level control switches and access covers.

3.6.1 Demonstrate proper operation of all TLIs and level control switches. Fill tanks with water and pump down. Demonstrate operation of automatic controls on the sewage pumps and turbid water pumps.

#### 4. NOTES

This section is not applicable to this work item.

## WORK ITEM 14: Tanks (Sewage Holding), Preserve, Partial

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to prepare and preserve the following tank(s):

**TABLE 1 – TANKS**

TYPE OF TANK	LOCATION	CAPACITY - 95% (Gallons)	LOW SUCTION (Gallons)	% OF TANK COATING REPAIR
Sewage Holding	2-84-2-W	847	43	33%
Vacuum Collection	2-82-2-W	330	17	33%

1.2 Government-furnished property.

None.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

- Coast Guard Drawing 175 WLM 506-001, Rev G, Overflows, Air Escapes & Sounding Tubes Diagram
- Coast Guard Drawing 175 WLM-528-001, Rev E, Plumbing and Interior Deck Drains Diagram
- Coast Guard Drawing 175 WLM 593-001, Rev G, Sewage & Waste Water System Diagram
- Coast Guard Drawing 175 WLM 593-009, Rev E, Independent Tanks, Sewage Holding Tank
- Coast Guard Drawing 175 WLM 633-001, Rev D, Cathodic Protection

#### COAST GUARD PUBLICATIONS

- Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements
- Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures
- Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2020, Temporary Hull Accesses

**OTHER REFERENCES**

None

**3. REQUIREMENTS**

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.3.1 The Contractor must plug all inlet and outlet piping in the tank(s) to prevent contaminants from entering. Use plugs with an attached lanyard, ring or other system that will ensure plugs are not lost in the pipe openings. Maintain a plug accountability log outside the tank to prevent any of the installed temporary plugs from being lost inside the tank or forgotten inside at tank closure. Submit this log to the COR after completion of work item.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Piping.
- Pump(s).
- Zincs.

3.2 Temporary access openings. Due to limited access to work areas, the Contractor may, with express permission of the KO (via submission of a CFR), cut access holes to facilitate accomplishment of the work specified herein. Perform all work required to open and close the access openings in accordance with SFLC Std Spec 8636.

**NOTE**

**Requirements for tank opening and closing, content disposal, and inspection are covered in the clean and inspect item.**

3.3 Substrate inspection. After completion surface preparation and before coating application, the Contractor must perform a visual inspection of the prepared substrate, and submit a CFR.

3.4 Surface preservation. The Contractor must accomplish the following tasks for the tanks listed in paragraph 1.1 (Intent):

3.4.1 Remove and retain the tank manhole cover(s).

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3.4.2 The Contractor must prepare and coat the designated tank interior surfaces, using the system specified for "Tanks and Voids (Grey Water, Sewage, and CHT Tanks), Option II", in SFLC Std Spec 6310, Appendix B (Cutters and Boat Interior Paint Systems).

**NOTES**

**1. A profile suitable for over coating would be similar to what is produced by abrading the coating with 100-grit paper.**

3.4.2.1 The Contractor must prepare all surfaces identified for preservation in accordance with SFLC Std Spec 6310, paragraph 3.1.13, Touch-ups and minor coating repairs.

**NOTE**

**Surfaces being preserved are considered "critical-coated surfaces".**

3.5 In-process quality control. The Contractor must abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for "critical-coated surfaces").

#### **4. NOTES**

This section is not applicable to this work item.

**WORK ITEM 15: Tanks, Dirty Oil and Waste, Preserve, 100 Percent,**

**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to prepare and coat 100% of the tank(s) identified in Table 1:

**TABLE 1 – TANKS**

<b>TYPE OF TANK</b>	<b>LOCATION</b>	<b>CAPACITY - 95% (GALLONS)</b>	<b>% OF TANK COATING REPAIR</b>	<b>LOW SUCTION (GALLONS)</b>
Oily Water	3-74-0-F	937	100	28
Waste Oil	3-77-0-F	586	100	18

1.2 Government-furnished property.

None.

**2. REFERENCES**

**COAST GUARD DRAWINGS**

Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Plans

**COAST GUARD PUBLICATIONS**

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2020, Temporary Hull Accesses

## OTHER REFERENCES

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) C6183, 2013, Cork and Rubber Composition Sheet; For Aromatic Fuel and Oil Resistant Gaskets

## 3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not Applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Temporary access openings. Due to limited access to work areas, the Contractor may, with express permission of the KO (via submission of a CFR), cut access holes to facilitate accomplishment of the work specified herein. Perform all work required to open and close the access openings in accordance with SFLC Std Spec 8636.

3.3 Tank content removal. The Contractor must remove and dispose of up to 100 gallons of waste oil and oily water. in accordance with The Contractor must refer to Coast Guard Drawing 175 WLM 601-003 for guidance..

**NOTE**

**Vessel may come in with less fuel than specified above.**

3.4 Tank content and waste disposal. The Contractor must dispose of tank contents and all cleaning fluids in compliance with all applicable Federal, state, and local laws, ordinances and regulations. Document a complete chain of custody record of the removed tank contents and generated wastes, from the vessel to the point of final destination or delivery. Submit document to the COR upon completion of work.

3.5 Surface preservation. The Contractor must accomplish the following tasks for the tanks listed in paragraph 1.1 (Intent):

3.5.1 Remove and retain the tank manhole cover(s).

3.5.2 Prepare and coat all (100%) tank interior surfaces (including internal surfaces of manhole cover(s), manhole cover hull ring(s) extending outward to the weld line that ties the hull ring into the tank plating on the tank exterior), using the system specified for "Tanks and Voids (Fuel/JP-5 Tanks, Service, Storage,

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Overflow, Drain, Option I or Option II)" in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top coat color to match existing.

3.5.3 Prepare and coat all manhole cover external surfaces to match existing adjacent surfaces, using the system specified for "Decks, Metal Interior and Non-Skid Areas (Steel and Aluminum Decks - Wet Areas, Food Preparation Areas, Exit Areas, and Areas Subject To Condensation)", in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top coat color to match existing adjacent surfaces.

3.6 In-process quality control measures. The Contractor must abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for "critical-coated surfaces). Select finish/top coat color to match existing adjacent surfaces. Surfaces being preserved are considered "critical-coated surfaces".

3.7 Inspection. After surface preparation and before coating application, the Contractor must visually inspect all interior surfaces; including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Submit a CFR including the following, as applicable:

- Structural condition.
- Inaccessible areas.
- Tank level indicator (TLI) and/or float switch condition.
- Sounding tube and striker plate condition.
- Suction and discharge piping.

3.8 Tank closing. The Contractor must ensure that the tank(s) remain open for at least 24 hours after completion of the tasks specified above. Notify the COR at least 24 hours prior to closing the tank(s). After satisfactory inspection by the Coast Guard Inspector and after all authorized repairs, accomplish the following:

- Reinspect all TLIs, as applicable, to verify proper operation. Submit CFR.
- Close tank manhole cover(s) with new gasket material conforming to AMS-C-6183.

## 4. NOTES

This section is not applicable to this work item.

**WORK ITEM 16: Tanks, Dirty Oil and Waste, Preserve, Partial,**

**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to prepare and coat the following tank(s) in locations designated by the Coast Guard Inspector, up to the percentage of surface area indicated:

**TABLE 1 – TANKS**

TYPE OF TANK	LOCATION	CAPACITY - 95% (GALLONS)	% OF TANK COATING REPAIR	LOW SUCTION (GALLONS)
Oily Water	3-74-0-F	937	33	28
Waste Oil	3-77-0-F	586	33	18

1.2 Government-furnished property.

None.

**2. REFERENCES**

**COAST GUARD DRAWINGS**

Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Plans

**COAST GUARD PUBLICATIONS**

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2020, Temporary Hull Accesses

## OTHER REFERENCES

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) C6183B, 2019, Cork and Rubber Composition Sheet; For Aromatic Fuel and Oil Resistant Gaskets

## 3. REQUIREMENTS

3.1 General. The Contractor must accomplish the following for all tanks listed in paragraph 1.1 (Intent). The Contractor must refer to Coast Guard Drawing 175 WLM 601-003 for guidance.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not Applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Temporary access openings. With express permission of the KO via submission of a CFR and in accordance with SFLC Std Spec 8636, the Contractor may perform all work required to cut open and close temporary access openings to facilitate accomplishment of the work specified herein.

3.3 Tank content removal. The Contractor must remove and dispose of up to 100 gallons of waste oil and oily water.

**NOTE**

**Vessel may come in with less fuel than specified above.**

3.4 Tank content and waste disposal. The Contractor must dispose of tank contents and all cleaning fluids in compliance with all applicable Federal, state, and local laws, ordinances and regulations. Document a complete chain of custody record of the removed tank contents and generated wastes, from the vessel to the point of final destination or delivery. Submit document to the COR upon completion of work.

3.5 Surface preservation. The Contractor must remove and retain the tank manhole cover(s). Prepare and coat the designated tank interior surfaces, using the system specified for "Tanks and Voids (Fuel/JP-5 Tanks, Service, Storage, Overflow, Drain, Option I or Option II)" in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Power tool clean all affected surfaces to "bare metal", in lieu of using abrasive blasting, and feather the edges of existing intact coating to the prepared areas, in order to provide a smooth transition with the new paint.

3.6 In-process quality control. The Contractor must abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for "critical-coated surfaces).

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3.7 Inspection. After surface preparation and before coating application, the Contractor must visually inspect all interior surfaces; including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Submit a CFR including the following, as applicable:

- Structural condition.
- Inaccessible areas.
- Tank level indicator (TLI) and/or float switch condition.
- Sounding tube and striker plate condition.
- Suction and discharge piping.

3.8 Tank closing. The Contractor must ensure that the tank(s) remain open for at least 24 hours after completion of the tasks specified above. Notify the COR at least 24 hours prior to closing the tank(s). After satisfactory inspection by the Coast Guard Inspector and after all authorized repairs, accomplish the following:

- Reinspect all TLIs, as applicable, to verify proper operation.
- Close tank manhole cover(s) with new gasket material conforming to AMS-C-6183B.

## 4. NOTES

This section is not applicable to this work item.

**WORK ITEM 17: Tanks, Potable Water Preserve, 100 Percent**

**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to prepare and coat 100% of the surfaces of the following tank(s):

**TABLE 1 - TANKS**

TYPE OF TANK	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)
Potable Water	1-94-0-W	2,167	68
Potable Water	2-36-1-W	5,172	163

1.2 Government-furnished property.

None.

**2. REFERENCES**

**COAST GUARD DRAWINGS**

Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Plans

Coast Guard Drawing 175 WLM 533-006, Rev D, Independent Tank Potable Water Hb 950

**COAST GUARD PUBLICATIONS**

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2020, Temporary Hull Accesses

## OTHER REFERENCES

American National Standards Institute/NSF International (ANSI/NSF) 61, 2008, Drinking Water System Components - Health Effects

American National Standards Institute/American Water Works Association (ANSI/AWWA) C652, 2011, Disinfection of Water-Storage Facilities

## 3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 In-process quality control measures. The Contractor must abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for "critical-coated" surfaces). Surfaces being preserved are considered "critical-coated surfaces".

3.3 Temporary access openings. Due to limited access to work areas, the Contractor may, with express permission of the KO (via submission of a CFR), cut access holes to facilitate accomplishment of the work specified herein. Perform all work required to open and close the access openings in accordance with SFLC Std Spec 8636.

3.4 Tank content removal. The Contractor must remove and dispose of all tank contents in accordance with all applicable Federal, State, and local regulations. The Contractor must notify the Dockmaster prior to filling or draining the potable water tank(s).

3.5 Surface preservation. The Contractor must accomplish the following tasks for the tanks listed in paragraph 1.1 (Intent):

3.5.1 Remove and retain the tank manhole cover(s).

3.5.2 Prepare and coat all tank interior surfaces (including internal surfaces of manhole cover(s), manhole cover hull ring(s) extending outward to the weld line that ties the hull ring into the tank plating on the tank exterior), using the system specified for "Tanks and Voids (Potable Water Tanks)" in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top coat color to match existing.

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3.5.3 Prepare and coat all manhole cover external surfaces to match existing adjacent surfaces, using the system specified for “Decks, Metal Interior and Non-Skid Areas (Steel and Aluminum Decks - Wet Areas, Food Preparation Areas, Exit Areas, and Areas Subject To Condensation)”, in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top coat color to match existing adjacent surfaces.

3.5.4 Heated air must be used if necessary to maintain the proper temperature during cure. Ventilation must be a continuous airflow with a minimum of one complete air change every four (4) hours.

3.5.5 Fully coated tanks must be cured in accordance with the manufacturer’s instructions for NSF/NEHC certification under the same conditions before being filled.

**NOTE**

**Typical curing times are at least 7 days and range up to 14 days (or longer), depending on the paint selected and environmental conditions.**

3.5.6 Curing time must be based on paint manufacturer’s recommendations for the specific application.

**CAUTION**

**Verify application and cure requirements with paint manufacturer prior to paint purchase and application. Lack of attention to environmental conditions can adversely impact paint system cure, cause unnecessary contract time delays, and negatively impact crew health and vessel habitability when tanks are put back into service.**

**DO NOT assume paint Product Data Sheet to be accurate. Contact paint manufacturer directly to verify, as formulations change, and new application information may be available.**

3.5.7 Freshly painted potable water tanks must be rinsed at least twice with freshwater before being disinfected and put into service.

3.6 Inspection. After surface preparation and before coating application, the Contractor must visually inspect all interior surfaces; including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Submit a CFR including the following, as applicable:

- Structural condition
- Inaccessible areas
- Tank level indicator (TLI) and/or float switch condition
- Sounding tube and striker plate condition
- Suction and discharge piping.

3.7 Tank closing. The Contractor must ensure that the tank(s) remain open for at least 24 hours after completion of the tasks specified above. Notify the COR at least 24 hours prior to closing the tank(s). After satisfactory inspection by the Coast Guard Inspector and after all authorized repairs, accomplish the following:

- Reinspect all TLIs, as applicable, to verify proper operation. Submit a CFR.
- Close tank manhole cover(s) with new gasket material conforming to ANSI/NSF 61 and new

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stud cotton grommets (where applicable).

3.6 Tank disinfecting. After all other work involving the potable water system and tank closing have been completed, the Contractor must disinfect and treat the affected potable water tank(s) and associated disturbed piping and components, as necessary, to meet or exceed the requirements of AWWA C652. After tank disinfecting, remove and dispose of all treated water in accordance with all Federal, state and local regulations. Ensure that no one enters the tanks once disinfection is completed.

### **4. NOTES**

This section is not applicable to this work item.

**WORK ITEM 18: Tanks, Potable Water, Preserve, Partial,**

**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to prepare and coat a portion of the surfaces of the following tank(s) as designated:

**TABLE 1 - TANKS**

TYPE OF TANK	LOCATION	CAPACITY - 95% (GALLONS)	% OF TANK COATING REPAIR	LOW SUCTION (GALLONS)
Potable Water	1-94-0-W	2,167	33	68
Potable Water	2-36-1-W	5,172	33	163

1.2 Government-furnished property.

None.

**2. REFERENCES**

**COAST GUARD DRAWINGS**

- Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Plans
- Coast Guard Drawing 175 WLM 533-006, Rev D, Independent Tank Potable Water Hb 950

**COAST GUARD PUBLICATIONS**

- Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements
- Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures
- Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2020, Temporary Hull Accesses

## OTHER REFERENCES

American National Standards Institute/NSF International (ANSI/NSF) 61, 2008, Drinking Water System Components - Health Effects

American National Standards Institute/American Water Works Association (ANSI/AWWA) C652, 2011, Disinfection of Water-Storage Facilities

## 3. REQUIREMENTS

3.1 General. The Contractor must refer to Coast Guard drawings 175 WLM 601-003 and 175 WLM 533-006 for guidance.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Temporary access openings. Due to limited access to work areas, the Contractor may, with express permission of the KO (via submission of a CFR), cut access holes to facilitate accomplishment of the work specified herein. Perform all work required to open and close the access openings in accordance with SFLC Std Spec 8636.

3.3 In-process quality control measures. The Contractor must abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for “critical-coated surfaces”). Surfaces being preserved are considered “critical-coated surfaces”.

3.4 Tank content removal. The Contractor must remove and dispose of all tank contents in accordance with all applicable Federal, State, and local regulations. The Contractor must notify the Dockmaster prior to filling or draining the potable water tank(s).

3.5 Surface preservation. The Contractor must remove and retain the tank manhole cover(s). Prepare and coat the designated tank interior surfaces, using the system specified for "Tanks and Voids (Potable Water Tanks)" in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Power tool clean all affected surfaces to “bare metal”, in lieu of using abrasive blasting; and feather edges of existing intact coating to the prepared areas, in order to provide a smooth transition with the new paint. Select finish/top coat color to match existing adjacent surfaces.

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3.5.1 The Contractor must ensure heated air is used if necessary to maintain the proper temperature during application and cure. Ventilation must be a continuous airflow with a minimum of one complete air change every four (4) hours.

3.5.2 The Contractor must ensure tanks are cured in accordance with the manufacturer's instructions for NSF/NEHC certification under the same conditions before being filled.

**NOTE**

**Typical curing times are at least 7 days, and range up to 14 days or longer, depending on the paint selected, amount of surface area covered, and environmental conditions. See paint manufacturer's recommendations for specific application.**

**CAUTION**

**Verify application and cure requirements with paint manufacturer prior to paint purchase and application. Lack of attention to environmental conditions can adversely impact paint system cure, cause unnecessary contract time delays, and negatively impact crew health and vessel habitability when tanks are put back into service.**

**DO NOT assume paint Product Data Sheet to be accurate. Contact paint manufacturer directly to verify, as formulations change and new application information may be available.**

3.5.3 The Contractor must ensure freshly painted potable water tanks are rinsed at least twice with freshwater before being disinfected and put into service.

3.6 Inspection. After surface preparation and before coating application, the Contractor must visually inspect all interior surfaces; including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Submit a CFR including the following, as applicable:

- Structural condition
- Inaccessible areas
- Tank level indicator (TLI) and/or float switch condition
- Sounding tube and striker plate condition
- Suction and discharge piping.

3.7 Tank closing. The Contractor must ensure that the tank(s) remain open for at least 24 hours after completion of the tasks specified above. Notify the COR at least 24 hours prior to closing the tank(s). After satisfactory inspection by the Coast Guard Inspector and after all authorized repairs, accomplish the following:

- Reinspect all TLIs, as applicable, to verify proper operation. Submit a CFR.
- Close tank manhole cover(s) with new gasket material conforming to ANSI/NSF 61 and new cotton stud grommets (as applicable).

3.8 Tank disinfecting. After all other work involving the potable water system and tank closing have been

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completed, the Contractor must disinfect and treat the affected potable water tank(s) and associated disturbed piping and components, as necessary to meet or exceed the requirements of AWWA C652. After disinfecting the tank(s), remove and dispose of all treated water in accordance with all Federal, state and local regulations. Ensure no one enters the tanks once disinfection is completed.

### **4. NOTES**

This section is not applicable to this work item.

## WORK ITEM 19: Watertight Hatches 1-50-1 and 01-89-2, Upgrade

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to upgrade watertight Hatches 1-50-1 and 01-89-2.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	30in x 30in Watertight Hatch w/ 21" Scuttle, 15 PSI	N/A	2 ea.	14,500.00

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 167-001, Rev L, Structural Closures

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

#### OTHER REFERENCES

None.

### 3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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3.1.3 Protective measures - general. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces in the vicinity of the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Ladders.
- Overhead insulation.

3.2 Upgrading particulars. The Contractor shall remove accomplish the following:

3.2.1 Crop, remove, and dispose of both existing Watertight Hatches 1-50-1 and 01-89-2.

3.2.2 Fit and install a new Government-furnished watertight hatch assembly in place of each removed hatch. Provide new gaskets and fasteners, with the new installations.

3.2.2.1 Relocate existing safety rail forward of Watertight Hatch 1-50-1, as designated by the Coast Guard Inspector, to not interfere with proper opening of the hatch scuttle.

3.2.2.2 Make all required deck modifications, to ensure proper fit of each new hatch.

3.3 Surface Preservation.

3.3.1 Interior surfaces. The Contractor shall prepare and coat interior surfaces of the new hatches and all other disturbed surfaces, using the system specified in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top coat color to match existing adjacent surfaces.

3.3.2 Exterior surfaces. The Contractor shall prepare and coat the exterior surfaces of the new hatches, including associated coaming and disturbed deck surfaces using the coating system specified in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Paint Systems). Do not paint knife-edges, gaskets, or any moving parts; including dogs, nuts, wedges, spindles, yokes, packing, connecting rods and hinge pins. Select top/finish coat color as follows:

- White (17925) for the hatches.
- Grey (16099) for coaming and disturbed deck surfaces.

3.4 Closure. The Contractor shall demonstrate 100 percent gasket contact and proper dog operation by means of a chalk test for each renewal. Ensure that initial contact between gasket and knife edge occurs throughout extent of gasket before final securing of dogs, and without use of excessive closing force. If the mark on the gasket is not uniform, adjust as necessary to achieve uniform contact and retest.

## 4. NOTES

4.1 Damage control markings. The Coast Guard Inspector will apply appropriate damage control decals to the hatches, as appropriate.

## **WORK ITEM 20: Machinery Plant Control and Monitoring System, Groom**

### **1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to conduct a full systems groom of the Machinery Plant Control and Monitoring System (MPCMS).

1.1.1 Repair work on the following onboard equipment (hardware and associated software) may be required:

- Engineering Control Center Console (ECCC)
- Main Ship Control Console (MSCC)
- Port and Starboard Secondary Conning Stations (SCS)
- The TANO Network (TANOnet)
- Remote Terminal Units (RTU)
- MPCMS Data Logger System
- Operator workstations

1.2 Government-furnished property.

None.

### **2. REFERENCES**

#### **COAST GUARD DRAWINGS**

Coast Guard Drawing 175-WLM 202-1, Rev J, MPCMS Cabling Diagram

Coast Guard Drawing 175-WLM 202-2, Rev F, MPCMS Cabling Diagram COED

Coast Guard Drawing 175-WLM 202-6, Rev B, MPCMS Wiring Modifications to Main & Secondary Consoles (551-559)

Coast Guard Drawing 175-WLM 202-7, Rev C, MPCMS Wiring Data Modifications to Consoles (COED), Hulls 551-559

Coast Guard Drawing 175-WLM-202-201, Rev Q, MPCMS

Coast Guard Drawing 225-WLB 202-1, Rev F, MPCMS Cabling Diagram

Coast Guard Drawing 225-WLB 202-2, Rev G, MPCMS COED

Coast Guard Drawing 225B-WLB 202-2, Rev D, MPCMS Connection Table

Coast Guard Drawing 225B-WLB 202-1, Rev G, MPCMS Cabling Diagram

## COAST GUARD PUBLICATIONS

CGTO PG-85-00-230-S, August 2013, Planned Maintenance System Development Process Guide  
Coast Guard Technical Publication (TP) 3605 A & B Machinery Plant Control & Monitoring System Operating Manual (MPCMSOM)  
Coast Guard Technical Publication (TP) 3607 MPCMS Computer System Operating Manual (CSOM)  
Coast Guard Technical Publication (TP) 3608 MPCMS Computer System Diagnostic Manual (CSDM)  
Coast Guard Technical Publication (TP) 3509 MPCMS Software User's Manual (SUM)  
Coast Guard Technical Publication (TP) 3505 A & B Machinery Plant Control & Monitoring System Operating Manual (MPCMSOM)  
Coast Guard Technical Publication (TP) 3585 A& B Machinery Plant Control & Monitoring System Operating Manual (MPCMSOM)  
Coast Guard Technical Publication (TP) 3932 MPCMS Data Logging System  
Coast Guard Technical Publication (TP) 3589 MPCMS Computer System Manual  
Coast Guard Technical Publication (TP) 3507 MPCMS Computer System Operating Manual (CSOM)  
Coast Guard Technical Publication (TP) 3508 MPCMS Computer System Diagnostic Manual (CSDM)  
Coast Guard Technical Publication (TP) 3509 MPCMS Software User's Manual (SUM)  
Coast Guard Technical Publication (TP) 10502 Machinery Plant Control & Monitoring System Operating Manual (MPCMSOM)  
COMDTINST M9085.1, Rev C, Naval Engineering Computer Aided Design Standards  
SFLC Technical Standard 086, June 2013, Technical Publications (TP)  
Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements  
Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2020, Shipboard Electrical Cable Test  
Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2020, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation  
Surface Forces Logistics Center Standard Specification 0850 (SFLC Std Spec 0850), 2020, General Requirements for Drawing Preparation

## OTHER REFERENCES

None

## 3. REQUIREMENTS

### 3.1 General.

3.1.1 CIR. The Contractor must submit a CIR for the inspections listed in the following paragraph(s):

- 3.12 Operational Testing.

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3.1.2 Tech Rep. The Contractor must provide the services of an OEM authorized/ licensed Tech Rep for the Machinery Plant Control and Monitoring System (MPCMS) and TANOnet to accomplish the following on site:

- Provide manufacturer's proprietary system/ equipment information, software, and tools.
- Assist with and ensure compliance with manufacturer's procedures and standards during disassembly, inspection, repair, modification, calibration, and reassembly of the equipment/system.

**NOTE**

**L3 / L3 Harris is the only known OEM servicing agent by this office at the time this specification was developed however, not limited if other sources are found that can meet the requirements in 3.1.2**

3.1.2.1 Ensure the Tech Rep is an OEM Certified Representative for the system/equipment stated above and demonstrated on their résumé.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Electrical work. The Contractor must accomplish all electrical work in accordance with SFLC Std Spec 3042, and test cables in accordance with SFLC Std Spec 3041. Utilize the existing wire ways for new cable runs as much as possible.

3.3 System Groom Plan. The Contractor must develop and submit a comprehensive System Groom Plan including, at a minimum, the elements in the below subparagraphs.

3.3.1 Groom Procedure. The Contractor must develop and submit a written procedure to groom the system. Prepare a test plan delineating all tests to be performed on core system components and functions to be assessed during performance of the shipboard groom. Provide a detailed written test procedure for each item on the test plan, including pass/fail criteria and a list of parts to be expended.

3.3.2 Groom Test Sequence. The Contractor must prepare a test sequence Gantt chart that shows the inspections, calibrations, maintenance actions, and pre-operational tests to be performed on shipboard equipment while dockside, as well as the post-groom operational tests to be performed during dock trials or sea trials. Include the expected duration of each task, show any task interdependencies or sequencing, and note where interfacing systems will be impacted, requiring further coordination.

3.3.2.1 Post Calibration Testing. The Contractor shall provide support to the vessel crew to perform a sea trial to test and verify system functionality associated with this Statement of Work, while the vessel is waterborne or underway, prior to certification as being complete. The Contractor shall be responsible for ensuring all test procedures are prepared, approved, and distributed for the sea trials, and shall be responsible for recording test data and submitting CFRs to the COR.

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3.3.3 Specific tasks. The Contractor must inspect and evaluate as part of the System Groom Procedure and Test Sequence:

- ECCC and all contained subsystems and components.
- All RTUs and remote consoles, including the signals that are being sent to and are being received from external equipment, such as motor operated valve status changes.
- MSCC Propulsion and Thruster Panel and all contained subsystems and components.
- Port and Starboard SCS.
- Accommodation alarm panels (if applicable).
- Video display terminals (VDT) at the Log Office and Engineering Officer's stateroom (if applicable).
- Quarterdeck terminal (if applicable).
- Bridge VDT (BVDT).
- TANOnet and its integrated subsystems.
- System interoperability with other systems' interfaces and databases as listed in section 4 of Tech Pub 10502 (all WLB class) or Tech Pub 3605 (WLM class).

3.3.4 Performance test. The Contractor must plan and conduct, when specifically requested by the COR, the MPCMS performance test, which must include:

- Observation that commands originated from MPCMS are promptly transmitted to and received by interfacing systems.
- Observation that human-machine interface (HMI) screens are updated in near real time in response to status changes, alarms, and monitored parameter variations in interfacing systems.
- Observation of the alarm stack to ensure that alarms occurring nearly simultaneously are all captured.
- Observation that state changes are detected and displayed when interfacing machinery systems are operated using a local control mode or are tripped by an independent safety system.
- Analysis of any command failures to determine the cause and isolate the problem to MPCMS or the interfacing machinery system.
- Review of the alarm log to verify that all logged alarms were legitimate and that no alarms transmitted by interfacing systems were delayed or never displayed.
- Review of the event log to verify that all logged events were legitimate and that no events transmitted by interfacing systems were delayed or never captured.
- Review of the network and communications logs to verify that no anomalies occurred on the network or communication channels during interfacing system operation.
- Audit of the data logger to ensure that a representative sample of logged machinery operating parameters was being accurately recorded at the proper scan rate.

3.3.5 Change and upgrade documentation. The Contractor must incorporate all known upgrades and changes in the Groom Plan, providing documentation according to the process described in paragraph 3.9. If there are any previously unplanned system changes found to be necessary only upon inspection, they must be handled according to the process for "Additional Work," detailed in paragraph 3.8.1.

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3.3.6 Plan submission. The Contractor must submit the completed System Groom Plan at least fourteen (14) days prior to beginning of scheduled groom.

3.4 Subcontracting. The Contractor must not subcontract any of the services required by this contract to be performed by persons other than the contractor or the contractor's employees without the prior written consent and authorization of the KO.

3.5 Accountability. The Contractor must provide a single on-site point of contact for the duration of the groom who will be responsible for all employees and subcontractors (if applicable).

3.6 Performance. The Contractor must test, calibrate, and validate system and component performance as outlined in the Groom Procedure, Test Sequence, and the Groom Performance Test Plan. The technical representative must arrive at the cutter to perform the groom as scheduled by the COR.

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment, under the guidance of the Contractor.**

3.6.1 The Contractor must be responsible for all equipment adjustments and calibrations during the groom visit but must actively engage Coast Guard personnel while performing these tasks for their familiarization benefit.

3.6.2 The Contractor must perform the groom procedure over a period of no more than three (3) days with two (2) additional days for testing and validation.

3.6.3 The Contractor must provide technical guidance any changes or upgrades that will be implemented during the performance of the groom.

3.7 Circuit card services. The Contractor must, in support of the groom execution, provide in-shop inspection, testing, and repair of MPCMS and other TANO system cards. Provide an expedited shipping option for parts upon COR request.

3.8 CFR and Field Service Report. The Contractor must submit a field service report, including summary CFR package. At a minimum, the below CFR's will be included detailing observations at time of arrival and corrective actions taken:

- Check of installed MPCMS software revision and load with the most current version.
- Inspect all batteries installed on processor and memory cards and submit a CFR to identify any which require replacement if old or significantly discharged.
- Verify the firmware revision loaded on each printed circuit card with a processor. Reload firmware as needed.
- Test all direct current power supplies individually and identify any that fail to carry normal load.
- Inspect all 5 VDC power supply input power isolation relays and sockets. Identify any with cracks or visible deterioration.
- Check the tightness of all internal and external cable terminations, including screw terminals which may vibrate loose over time. Check all circuit board connectors for tightness and adjust contact gripping force as needed to improve continuity.
- Verify that all system instrumentation, controls, sensors, data acquisition modules, optical

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isolators, and communication channels are properly operating.

3.8.1 Additional work. The Contractor must submit an immediate CFR for any malfunctioning component which requires additional work not identified in the agreed Groom Performance Plan delivered per paragraph 3.3.

3.9 Integrated Logistics Support. The Contractor must provide logistical support and information for any new equipment proposed and/or installed on the MPCMS. Modifications made to the equipment must be accompanied by updates of all the elements in the below subparagraphs that relate to those changes.

3.9.1 Engineering Data for Provisioning (EDFP). The Contractor must provide Engineering Data for Provisioning (EDFP). Include a parts list containing all of the installed parts, along with the original equipment manufacturer (OEM), OEM part or assembly numbers, the OEM's name and address, the OEM's cage code, and quantity used in each equipment, keyed to the updated drawings. All spare parts necessary for overhaul of a unit must be identified in the printed technical documents supplied.

3.9.2 Recommended Spare Parts Lists. The Contractor must provide with the EDFP/PTD a recommended spare parts list for onboard repair parts (OBRP) and stock system parts. The spare parts list must list applicable manufacturer's maintenance tasks for each line item (both preventive and corrective). Refer to section 5.4 for additional information.

3.9.2.1 Onboard repair parts (OBRP) are items that unit personnel can replace without additional special tools or technical support.

3.9.2.2 System stock must be the long lead time materials (materials with lead times over 90 days) and manufacturer designated critical items.

3.9.3 OEM Maintenance Requirements. The Contractor must provide OEM maintenance recommendations, in addition to the maintenance recommendations in the Technical Publication, to allow for Government development of Maintenance Procedure Cards. Guidance for providing this information can be found in Chapter 7 of CGTO PG-85-00-230-S. Identify at least the following line items:

- Applicable maintenance task code
- Maintenance procedure title
- Maintenance procedure interval
- Maintenance procedure description
- Maintenance procedure sequenced tasks
- Maintenance procedure
- Maintenance procedure task type
- Associated parts name and number
- Quantity of parts per maintenance task
- Associated parts unit of issue
- Associated parts shelf life
- Associated parts unit price
- Special tools and equipment nomenclature
- Special tools and equipment CAGE and part number or National Stock Number
- Task descriptions

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3.10 Repair parts usage data. The Contractor must provide parts usage data associated with all equipment repairs completed during the groom.

3.10.1 Include the following subcomponent information, organized according to the nomenclature and model number of the component or assembly being repaired:

- Part nomenclature
- Part number
- Part quantity used
- Part manufacturer

3.10.2 The Contractor must submit data electronically within fourteen (14) days of completion of the groom.

3.11 Operational testing. The Contractor must plan and participate in operational testing, including up to 1 day of underway testing, after completion of the Groom Procedure. The Operational Test Plan must be designed to demonstrate the success of any repairs, adjustments, and calibrations, and to validate system operation according to the manufacturers' specifications. Submit a CIR.

## 4. NOTES

It is recommended that this requirement be completed in conjunction with Z-Drive calibrations, if included in the specification package.

## WORK ITEM 21: Potable Water Piping, Renew

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew designated hot Potable Water System piping, located in the POTW EQPT RM (Compartment 3-42-1-E).

1.2 Government-furnished property.

None.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 533-001, Rev H, Potable Water System Diagram

Coast Guard Drawing 175 WLM 533-003, Rev G, Potable Water System A/D Hull Block 910, 920, 930, 940, 950

NAVSEA Drawing 804-5959214, Rev -, Piping Insulation-Installation Details

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

#### OTHER REFERENCES

American National Standards Institute/American Water Works Association (ANSI/AWWA) C652, 2019, Disinfection of Water-Storage Facilities

ASTM International (ASTM) F683, 2014, Standard Practice for Selection and Application of Thermal Insulation for Piping and Machinery

ASTM International (ASTM) F992, 2017, Standard Specification for Valve Label Plates

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), SP-58, 2018, Pipe Hangers and Supports – Materials, Design, Manufacture, Selection, Application and Installation

### 3. REQUIREMENTS

#### 3.1 General.

##### 3.1.1 CIR.

None.

##### 3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Insulation
- Piping
- Hot Water

3.2 Fluid handling. The Contractor shall remove and dispose of removed fluids from the affected piping system, in accordance with all applicable Federal, state, and local regulations.

**WARNING**

**Do not drain ANY fluids, including fresh water, into any space, bilge, or exterior location.**

3.3 Piping renewal particulars. The Contractor shall accomplish the following tasks, using Coast Guard Drawings 175 WLM 533-001 & 175 WLM 533-003 as guidance:

- Renew up to 25ft of p/w service piping (valve renewal is included in separate work item).
- Renew closed cell insulation on affected piping.

3.3.1 Pipe hangers. The Contractor shall furnish, fit, and install new pipe hangers in accordance with MSS SP-58.

3.3.2 Pipe labeling. The Contractor shall label affected piping as follows:

3.3.2.1 Stencil the following onto the pipe surfaces:

- Name of the piping system service.
- Destination, where feasible.
- Direction of flow, indicated by an arrow three inches long pointing away from the lettering (for reversible flow, point an arrow away from each end of the lettering).

3.3.2.2 Ensure all lettering and arrow(s) are as follows:

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- In general, black color except white for dark-colored piping.
- Applied in conspicuous locations and preferably near control valves.

3.3.3 Valve labeling. The Contractor shall renew all missing and damaged valve label plates, and install new valve label plates on new valves, in accordance with ASTM F992.

3.3.4 Pipe flushing. The Contractor shall flush all new and disturbed piping with clean fresh water until all debris is removed but no longer than five minutes. Ensure flushing fluid is directed to move scale and foreign debris away from installed machinery to prevent possible damage upon operational testing. Submit a CFR documenting date and time of flushing process and level of pipe cleanliness.

3.3.4.1 Dispose of flushing fluid in accordance with all applicable Federal, state, and local regulations.

3.3.4.2 Ensure all water is removed by blowing dry all flushed piping with dry, low-pressure air.

**WARNING**

**Do not drain ANY Fluids (including fresh water) into any space, bilge, or exterior location.**

3.4 Testing. After all work has been completed, the Contractor shall, in the presence of the Coast Guard Inspector, accomplish the following tasks, and submit a CFR:

3.4.1 Hydrostatic test. After all authorized repairs, the Contractor shall hydrostatically test all new and disturbed piping and components of the affected piping system in accordance with SFLC Std Spec 0740, Appendix C, Hydrostatic Test. Ensure zero leakage from or permanent deformation of pressure-containing parts by repairing all leaks, deformations, and discrepancies. Submit a CFR.

3.4.2 Leak test. After completing all authorized mechanical (i.e. threaded, bolted, etc.) joint repairs, the Contractor shall test the affected piping system's operation using the system fluid at normal operating pressure. Ensure zero visible leakage from or deformation of mechanical parts by repairing all leaks and discrepancies. Submit a CFR.

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.4.3 Operational test, post repairs. After completion of work, the Contractor shall thoroughly test, in the presence of the Coast Guard Inspector and demonstrate all items or shipboard devices that have been disturbed, used, repaired, altered, or installed to be in satisfactory operating condition. Submit a CFR.

3.5 Touch-up preservation. The Contractor shall prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

3.6 System disinfection. After all other work involving the potable water system is complete, the Contractor shall disinfect and treat the affected potable water valves and piping as necessary to meet or exceed the requirements of AWWA C652.

3.7 Piping insulation installation. The Contractor shall install new insulation materials over the exposed pipe surfaces at thicknesses appropriate to the application and temperature ranges specified in ASTM F683 Tables identified in Table 1 below and in accordance with details in NAVSEA Drawing 804-5959214:

- Associated pipe hangers
- Valves
- Fittings
- Flanges

**CAUTION**

**Use glass cloth lagging only in high traffic areas where insulation is subject to damage.**

**TABLE 1 - PIPING SYSTEMS INSULATION INSTALLATION REFERENCES**

PIPING SYSTEMS APPLICATION	TEMPERATURE RANGE	ASTM F683 TABLES
Interior gas, steam, hot water, and oil piping	125 to 1200 Deg. F	S1.1; S1.2; S1.4
Interior refrigerant, hot water, cold water, and chill water piping	-20 to +180 Deg. F	S1.1 and S1.5

3.6.1 Coat the newly installed insulation using the system specified for “Insulation Surfaces, Fiberglass Sheet/Closed Cell PVC Foam” in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems).

Image



#### **4. NOTES**

4.1 Tank content restoration. The ship's forces will procure new fluids as needed and refill all tanks at the appropriate time.

**WORK ITEM 22: Potable Water System Valves, Overhaul or Renew****1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to overhaul or renew listed hot potable water system valves as designated in Table 1.

**TABLE 1 - POTABLE WATER SYSTEM VALVES**

<b>VALVE #</b>	<b>DESCRIPTION</b>	<b>SIZE / TYPE MATERIAL / CONNECTIO N</b>	<b>CONNECTION/ RATED PRESSURE CLASS</b>	<b>INDUSTRY STANDARD</b>	<b>*O/ R</b>
V-101-29	HOT WTR RECIRC COV	½ in BRZ ASTM B61 or B62; SOLDER	CLASS 150	MSS SP-80	R
V-101-28	HOT WTR RECIRC COV	½ in BR ASTM B61 or B62; SOLDER Z	CLASS 150	MSS SP-80	R
V-121-1	COLD WTR SVC CHECK VALVE	½ in BR ASTM B61 or B62; SOLDER Z	CLASS 150	MSS SP-80	R
V-116-1	HOT WTR SVC CHECK VALVE	½ in BRZ ASTM B61 or B62; SOLDER	CLASS 150	MSS SP-80	R
V-106-4	COLD WATER SERVICE	½ IN BRZ ASTM B61 or B62; SOLDER	CLASS 150	MSS SP-80	R
V-012-1	P/W SUPPLY SERVICE	2-1/2" VALVE, SWING CHECK; BRZ, ASTM B61 or B62; FLANGED	CLASS 150	MSS SP-80	O / R

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V-012-2	P/W SUPPLY SERVICE	2-1/2" VALVE, SWING CHECK; BRZ, ASTM B61 or B62; FLANGED	CLASS 150	MSS SP-80	O / R
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\* "O" = Overhaul, "R"=Renew

1.2 Government-furnished property. None

## 2. REFERENCES

### COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 533-001, Rev H, Potable Water System Diagram

Coast Guard Drawing 175 WLM 533-003, Rev G, Potable Water System A/D Hull Block 910, 920, 930, 940, 950

### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

### OTHER REFERENCES

American National Standards Institute/American Water Works Association (ANSI/AWWA) C652, 2002, Disinfection of Water-Storage Facilities

American Society of Mechanical Engineers (ASME) B16.34, 2004, Valves-Flanged, Threaded, and Welding End

ASTM International (ASTM) F992, 2006, Standard Specification for Valve Label Plates

Manufacturers' Standardization Society of the Valve and Fittings Industry (MSS) SP-80, 2008 Edition, Bronze Gate, Globe, Angle and Check Valves

## 3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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3.1.3 Protective measures. The Contractor shall furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Deck plates
- Pumps
- Piping
- Insulation
- Hoses

3.2 Fluid handling. The Contractor shall drain and dispose of all residual fluids in the piping system in accordance with all Federal, state, and local rules and regulations.

3.3 Removal. The Contractor shall remove each valve identified in Table 1, Figure 1 and Figure 2. Immediately install blank flanges and gaskets, plugs and caps, as applicable, over openings. Secure each blank flange with at least two bolts 180 degrees apart.

3.4 Renewal. The Contractor shall renew all valves identified in Table 1 by an "R" in the "O/ R" column.

**NOTE**

**At no additional cost to the Government, the Contractor may opt to renew valves identified in Table 1 for overhaul by an "O" in the "O/ R" column.**

3.4.1 Equivalency. The Contractor shall ensure all renewed valves, including Mil-Std valves, are commercial-standard type valves conforming to the applicable standard listed in Table 1. The Contractor shall ensure each new valve is of identical material and equivalent to the valve it is replacing. Contractor shall obtain Coast Guard concurrence prior to installation.

3.4.2 Inspection. The Contractor shall visually inspect the piping and mounting arrangements and submit a CFR detailing any required modifications to accommodate the new valve(s).

3.5 Installation. Upon completion of all authorized work, the Contractor shall install all overhauled and renewed valves with renewed gaskets.

3.5.1 Disposal. The Contractor shall remove and dispose of all blank flanges and associated gaskets.

3.5.2 Secure. The Contractor shall secure each valve installation with renewed bolting hardware.

3.5.3 Labeling. The Contractor shall renew all missing and damaged valve label plates, and install new valve label plates on new valves, in accordance with ASTM F992.

3.6 Touch-up preservation. The Contractor shall prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

3.7 Pipe flushing. After all authorized work is completed; the Contractor shall accomplish the following:

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3.7.1 The Contractor shall flush all new and disturbed potable water system piping with clean fresh water for five minutes, or until all debris is removed, whichever occurs first.

3.7.2 The Contractor shall ensure that flushing fluid is directed to move scale and foreign debris away from installed machinery to prevent possible damage upon operational testing.

3.7.3 Submit a CFR documenting date and time of flushing process, and verification of piping cleanliness.

3.7.4 The Contractor shall dispose of flushing fluid in accordance with all applicable Federal, state, and local regulations.

**NOTE**

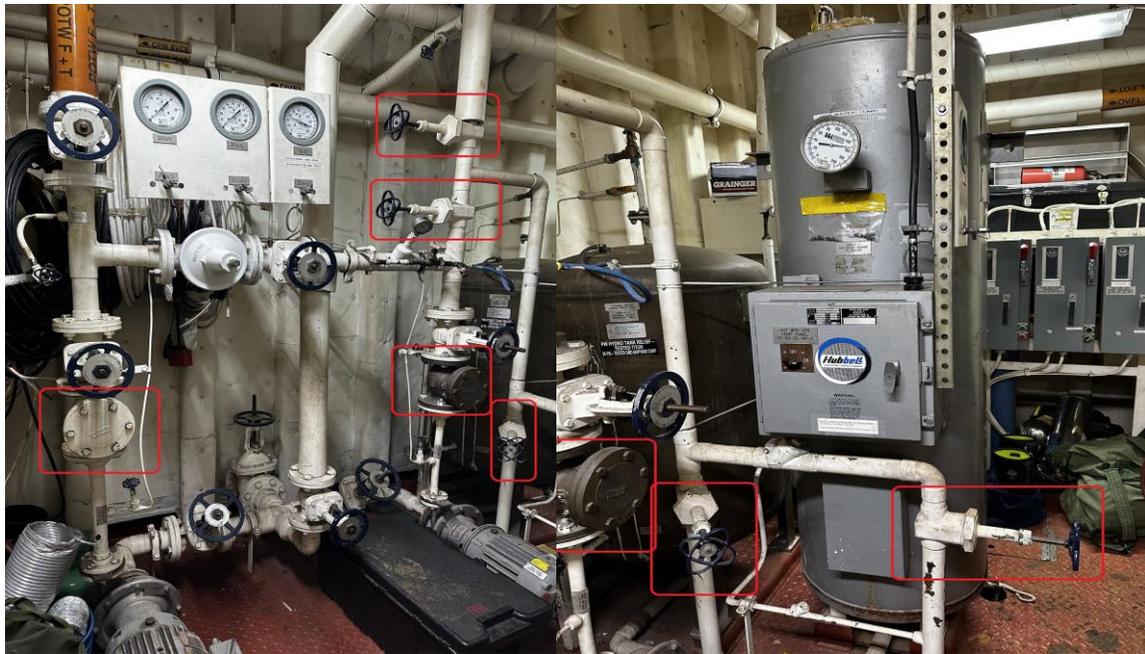
**Do not drain any fluids, including fresh water, into any space, bilge, or exterior location.**

3.8 Hydrostatic test. After all authorized repairs, the Contractor shall hydrostatically test all new and disturbed piping and components of the potable water piping system in accordance with SFLC Std Spec 0740, Appendix C, Hydrostatic Test. Ensure zero leakage from or permanent deformation of pressure-containing parts by repairing all leaks, deformations, and discrepancies. Submit a CFR.

3.9 Leak test. After completing all authorized mechanical (i.e. threaded, bolted, etc.) joint repairs, the Contractor shall test the disturbed potable water piping system's operation using the system fluid at normal operating pressure. Ensure zero visible leakage from or deformation of mechanical parts by repairing all leaks and discrepancies. Submit a CFR.

3.10 System disinfection. After all other work involving the potable water system is complete, the Contractor shall disinfect and treat the affected potable water valves and piping as necessary to meet or exceed the requirements of AWWA C652. After disinfection, remove and dispose of all treated water in accordance with all Federal, state and local regulations. Submit CFR.

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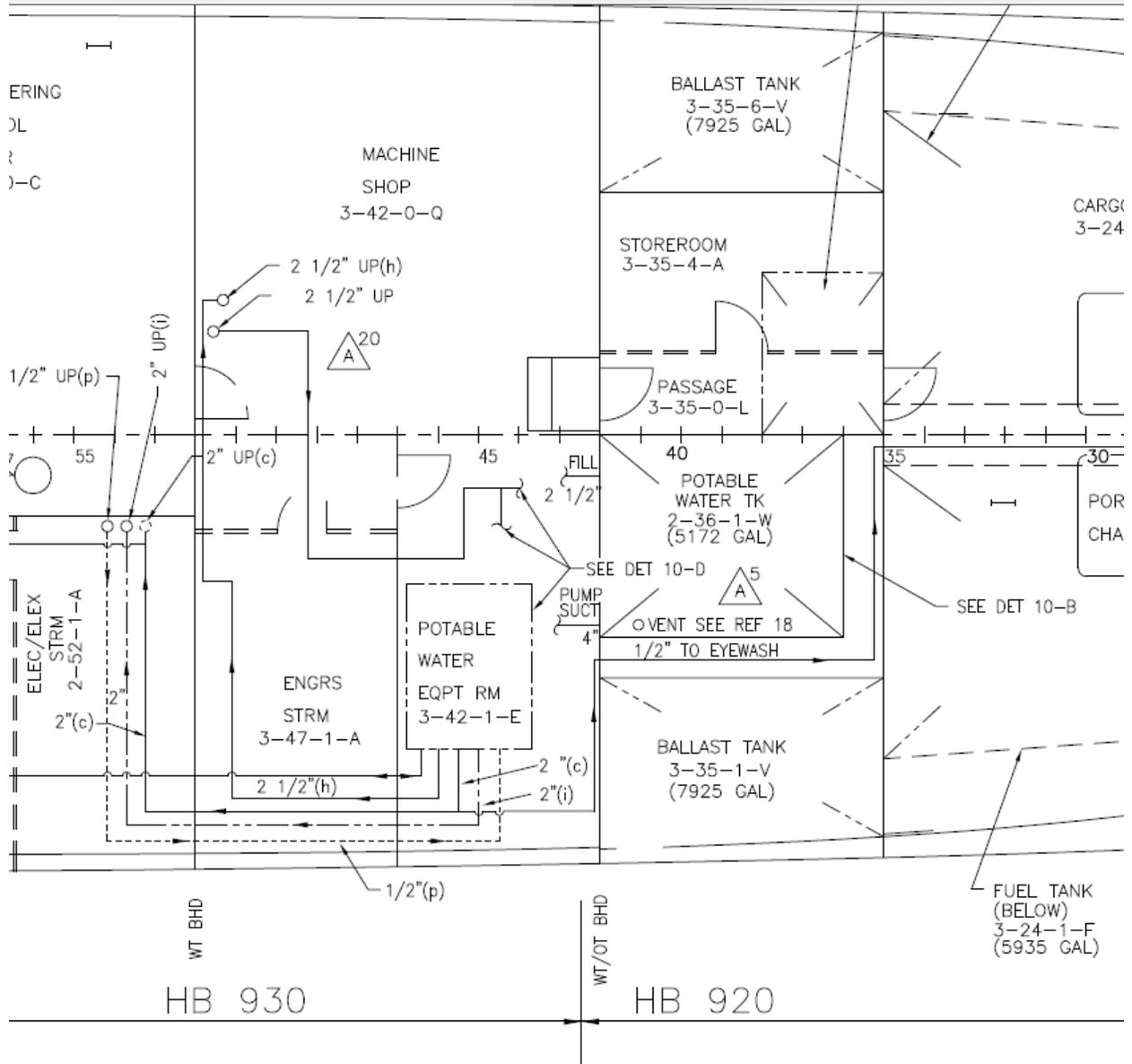


#### **4. NOTES**

This section is not applicable to this work item.



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**FIGURE 2. EXCERPT FROM 175 WLM 533-001 (POTABLE WATER SYSTEM DIAGRAM SHOWING EFFECTED VALVES)**

## WORK ITEM 23: Hydraulic Piping and Hangers, Renew

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew existing hangers and fabricate and install 02 additional hangers. Renew all hardware. Renew approximately 12 linear FT of 1 ¼” piping of the port and starboard chain stopper supply and return hydraulic piping located in the Cargo Hold’s overhead.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
Y	**Lockring Tool and Equipment	N/A	1 ea.	4000.00

\*Government-loaned property, which shall be returned to the vessel upon completion of the availability.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 505-1, Rev C, General Requirements for Piping Systems

Coast Guard Drawing 175-WLM 556-1, Rev L, Hydraulic System Diagram

Coast Guard Drawing 175-WLM 573-50, Rev A, Hydraulic Piping Installation for Chain Stopper

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

#### OTHER REFERENCES

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), SP-58, 2009, Pipe Hangers and Supports – Materials, Design, Manufacture, Selection, Application and Installation

### 3. REQUIREMENTS

#### 3.1 General.

##### 3.1.1 CIR.

None.

##### 3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Overhead Sheathing
- Nearby Piping
- Electrical wiring

#### 3.2 Hydraulic Piping Renewal.

3.2.1 The piping servicing the port and starboard chain stopper in the cargo hold's overhead shall be renewal due to corrosion.

3.2.1.1 CG Dwgs 175-WLM 505-1, 175-WLM 556-1, and 175-WLM 573-50 are the relative drawings describing the effected pipe system.

3.2.1.2 Isolate, drain and collect the lube oil and hydraulic fluid found in the piping. Dispose all drain fluids in accordance with applicable Federal, state, and local environmental regulations.

3.2.2 Subject piping is 1-1/4" ASTM A-106 GR C Seamless SCH 40 carbon steel piping.

3.2.3 Piping runs athwart ship, piping is to be renewed approximately 12 linear feet. Actual exact location shall be proposed by Contractor, and agreed to by CG Inspector. See attached Figures at end of this specification to better envision scope of work.

3.2.4 Existing hangers are to be renewed, and fabricate 02 additional hangers to be located approximately 4.5 FT from centerline to accommodate 1 1/4" pipe. Install new pipe hangers in accordance with MSS SP-58.

3.2.5 Contractor shall remove unused auto-gripe pipe brackets to facilitate pipe installment. USCG and Contractor shall jointly identify unused brackets for removal. Grind removed hangar/welds flush with base metal.

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3.2.6 Contractor shall fabricate and install new hoses, to suit new pipe as needed. Ensure hose is of similar material and rating as existing, and bend radius is proper. Hydrotest hose prior to installation. After hydrotest clean and dry hose of residual water.

3.2.7 To simplify installation and reduce contamination and subsequent pipe flushing Contractor shall use LOKRING fitting to connect new piping.

3.2.8 It is recommended that final break though on existing piping be made by a technique that will not introduce debris into the hydraulic system. Using a handheld hacksaw and vacuum is one technique that would be permissible. If the cut does cause debris to enter the internals of the piping a system cleanliness flush shall be required.

3.2.9 Provide suitable temporary plugs or caps for retained system piping after cuts/removals to prevent foreign matter from entering system or contamination of surrounding area.

3.2.10 If possible any new pipe assemblies shall be fabricated, cleaned, and tested off the Cutter. That way shipboard flushing, cleaning, and hydrotesting will not be required since only LOKRING connections will be made shipboard. Once piping is verified clean it shall be capped/sealed until ready for final connection.

3.2.11 The Contractor shall install the mechanically attached fittings in accordance with LOKRING Corporation's recommended installation practices.

**NOTE**

**Mechanically Attached Fitting (MAF) requires special equipment and trained personnel. The Government shall provide Loktool tool and equipment to accomplish this work item. Lokring Corp., 369 Hatch drive Foster City, CA 94404, Phone: 415-578-9999. Upon the completion of the work, return equipment to the Coast Guard Inspector.**

3.3 Hydrostatic Tightness Testing of Pipe Assemblies.

**NOTE**

**In lieu of piping hydrostatic testing, the Contractor has the option to perform NDT all new brazed and welded piping joints in accordance with paragraph 3.9.**

3.3.1 The Contractor shall provide at least 24 hours' notice to the COR before performing any tests.

3.3.2 In the presence of the Coast Guard Inspector, hydrostatically test (in accordance with NSTM Chapter 505, paragraph 505-11.1) the new piping assemblies in the shop with a clean fresh water or air to 150% of system operating pressure. Hold test pressure for a minimum of 30 minutes prior to inspection of the first joint. Inspect for leaks and weeps. No external leakage or permanent deformation is allowed. Repair and retest all leaks. Drain test medium after satisfactory completion of hydro test.

3.4 System Flush And Cleaning.

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3.4.1 In lieu of in-place flushing, all new piping is to be prefabricated as subassemblies in shipyard pipe shop then flushed and sealed before transportation to the cutter.

3.4.2 The Contractor shall shop clean the new pipe assemblies prior to installation in the hydraulic system. Cleaning of the newly installed and affected piping system shall be performed to a cleanliness Level II. Cleanliness level II is defined as a cleanliness that results in a surface visually free of grease, oil, flux, scale, dirt, loose particles, and any other contamination foreign to the base metal.

### 3.5 Operational Testing.

3.5.1 In the presence of the Coast Guard Inspector, conduct an operational test of the newly installed and modified piping systems at normal operating system pressure to verify tightness. Repair all leaks on disturbed connections.

3.5.2 Coast Guard personnel will operate machinery for the operational test.

3.5.3 During the operational test, verify tightness of all mechanical joints and proper operation of the disturbed components (starboard chain stopper).

### 3.6 Restoration.

3.6.1 Renew all insulation on disturbed/replaced piping and bulkhead in kind. Coat all new and disturbed piping in accordance with SFLC Std Spec 6310.

3.7 Touch-up preservation, general. The Contractor shall prepare and coat all new and disturbed exterior and interior surfaces, as applicable, to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

## 4. NOTES

This section is not applicable to this work item.



**FIGURE, Photograph of Typical LOKRING Union Fitting (used in similar application)**

## **WORK ITEM 24: Deck Covering, Interior, Wet and Dry, Renew**

### **1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to renew wet and dry, interior deck covering system(s).

1.2 Government-furnished property.

None.

### **2. REFERENCES**

#### **COAST GUARD DRAWINGS**

None

#### **COAST GUARD PUBLICATIONS**

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 6341 (SFLC Std Spec 6341), 2020, Install Interior Deck Covering Systems

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

#### **OTHER REFERENCES**

None

### **3. REQUIREMENTS**

3.1 General.

3.1.1 CIR. The Contractor must submit a CIR for the inspections listed in the following paragraph(s):

- 3.3 Ultrasonic thickness (UT) measurements.

3.1.2 Tech Rep.

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Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.3.1 Protective measures, specific. Apply protective measures as specified in SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection) to the following components, spaces and equipment:

- Galley Compartment 1-61-2-Q
- Scullery 1-61-2-Q
- Deck remote valves and covers

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Deck covering installation particulars. The Contractor must perform all tasks specified in SFLC Std Spec 6341 and herein, to install a new covering system in the location(s) specified in Table 1 below.

<b>NOTES</b>	
<p><b>1. The exposed deck surfaces are prepared and coated in accordance with SFLC Std Spec 6310. Refer to SFLC Std Spec 6341, Para 3.2.1.2 for additional information.</b></p>	
<p><b>2. Ensure the final surface condition of the deck is made “slip resistant” in accordance with manufacturer's installation procedures. Refer to SFLC Std Spec 6341, Para A2.1.2.2.</b></p>	

**TABLE 1 - DECKING SYSTEM**

LOCATION	AREA *SQFT	DECK MTL (A/S**)	SYSTEM/ APPENDIX (SFLC STD SPEC 6341)	COVE BASE	SYSTEM COLOR	UNDERLAYMENT REQUIREMENT
MESSDECK 1-61-1-L	600	S	Cosmetic Polymeric Epoxy Resin, Type III (One- Step Epoxy System)/Appen dix A	YES	See paragraph 3.4 (Deck covering color)	Install insulating underlayment.
P-WAY 1-79-0-1	50	S	Cosmetic Polymeric Epoxy Resin, Type III (One- Step Epoxy System)/Appen dix A	YES	See paragraph 3.4 (Deck covering color)	Renew existing underlayment

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STOWAGE LKR 1-79-1-Q	30	S	Cosmetic Polymeric Epoxy Resin, Type III (One- Step Epoxy System)/Appen dix A	YES	See paragraph 3.4 (Deck covering color)	Renew existing underlayment
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\*Approximated.

\*\*Note: A = Aluminum; S = Steel.

\*\*\*See SFLC Std Spec 6341 for definition of cove base.

3.3 Ultrasonic thickness (UT) measurement. The Contractor must take a total of {15} UT measurements of {1-61-1-L}, in locations designated by the Coast Guard Inspector, in accordance with SFLC Std Spec 0740, Appendix C. Use Coast Guard Drawing {Coast Guard Drawing 175-WLM 601-003} as guidance. Submit a CFR.

3.4 Deck covering color. The Contractor must submit a deck covering color chart to Coast Guard Inspector, for the purpose of color selection.



#### **4. NOTES**

This section is not applicable to this work item.

## WORK ITEM 25: Point of Use Potable Water Filters, Install

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to modify existing plumbing and install potable water lead removing filter assemblies at all point of use (i.e., drinking fountains / water coolers & scuttlebutts; ice makers and coffee makers).

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Water Filter Assembly, (3M) (ACN) 44330-01-F20-5959	PN: DWS160-L NSN:	6 ea.	160.00
N	Water Filter Element, (3M)	PN: 56134-44	6 ea.	180.00
N	Placard - Potable Water Flush	N/A	8 ea.	50.00

\*\*\*Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 533-001, Rev H, Potable Water System Diagram

Coast Guard Drawing FL 533-001, Rev B, Point of Use Potable Water Flush

Coast Guard Drawing FL 533-002, Rev A, Point of Use Water Filter Install

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

#### OTHER REFERENCES

None

### 3. REQUIREMENTS

#### 3.1 General.

##### 3.1.1 CIR.

None.

##### 3.1.2 Tech Rep.

Not applicable

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Sheathing
- Insulation
- Piping
- Electrical wiring
- Existing plumbing

3.2 Potable water filter installation. The Contractor must install potable water filter assemblies provided as Government furnished property (i.e., Paragraph 1.2) and as addressed in those Coast Guard Drawings listed in paragraph 2 REFERENCES.

**NOTE**

**Coast Guard referenced drawings for the most part represents actual shipboard potable water configuration. However, there can be instances where fixtures identified in new table “WATER FILTER INSTALLATION LOCATIONS” do not exist or are not shown in drawing views.**

3.2.1 Water filter location. The Contractor must refer to applicable potable water system diagram drawing specified in paragraph 2 for point of use locations. This drawing has been updated to include a new table titled “WATER FILTER INSTALLATION LOCATIONS”.

**NOTE**

**There is a chance actual shipboard potable water piping on some cutters do not directly service fixtures noted on system diagram drawing “WATER FILTER INSTALLATION LOCATIONS” Table.**

3.2.2 Water filter assembly installation. The Contractor must install potable water filters in accordance with CG Dwg FL 533-002.

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3.3 Potable water flush placard. The Contractor must ensure Potable Water Flush Placards (para 1.2) have been installed in accordance with CG Dwg FL 533-001 at those locations specified by Coast Guard potable water diagram drawing table “FLUSH PLACARD INSTALLATION LOCATIONS”. Submit a CFR.

3.4 Hydrostatic test. After all authorized repairs, the Contractor must hydrostatically test all new and disturbed piping and components of the potable water system in accordance with SFLC Std Spec 0740, Appendix C, Hydrostatic Test. Ensure zero leakage from or permanent deformation of pressure-containing parts by repairing all leaks, deformations, and discrepancies. Submit a CFR.

3.5 Leak test. After completing all authorized mechanical (i.e. threaded, bolted, etc.) joint repairs, the Contractor must test the potable water system's operation using the system fluid at normal operating pressure. Ensure zero visible leakage from or deformation of mechanical parts by repairing all leaks and discrepancies. Submit a CFR.

### NOTE

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.6 Operational test, post repairs. After completion of work, the Contractor must thoroughly test, in the presence of the Coast Guard Inspector and demonstrate all items or shipboard devices that have been disturbed, used, repaired, altered, or installed to be in satisfactory operating condition. Submit a CFR.

3.7 Touch-up preservation. The Contractor must prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

## 4. NOTES

This section is not applicable to this work item.

## **WORK ITEM 26: Main Diesel Engine, MDE, Exhaust Piping, Commercial Clean**

### **1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to clean the Main Diesel Engine (MDE) exhaust piping system, including the associated stack uptakes. Renew exhaust insulation covering on #1 and #2 MDEs

1.2 Government-furnished property.

None.

### **2. REFERENCES**

#### **COAST GUARD DRAWINGS**

Coast Guard Drawing 175 WLM 259-001, Rev A, Combustion Exhaust Diagram

Coast Guard Drawing 175 WLM 259-005, Rev C, Combustion Exhaust A&D, Hull Block 970

Coast Guard Drawing 175 WLM 508-002, Rev A, Combustion Exhaust Pipe Insulation

#### **COAST GUARD PUBLICATIONS**

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020,  
General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020,  
Requirements for Preservation of Ship Structures

#### **OTHER REFERENCES**

Code of Federal Regulations (CFR) Title 29, Part 1915, 2014, Occupational Safety and Health  
Standards for Shipyard Employment

### **3. REQUIREMENTS**

3.1 General.

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3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Access covers
- Exhaust stack
- MDE
- Piping
- Pipe insulation
- Vent ducting
- Wiring
- Exhaust pipe expansion joints
- Exhaust insulation blankets

3.2 Staging or scaffolding, netting. The Contractor must erect suitable staging or scaffolding in accordance with 29 CFR 1915, Subpart E (Scaffolds, Ladders and Other Working Surfaces) to facilitate work, as required.

3.2.1 Rig suitable safety netting, to protect workers during possible falls, and to protect the Engine Room and machinery from falling tools.

3.3 Work plan. The Contractor must develop and submit, to the COR, a plan for collecting and disposing of waste extracted during cleaning process. Ensure that the proposed plan must detail how and where exhaust piping will be disconnected, how entire length of exhaust piping will be divided/sectioned for cleaning, and precautions to protect the MDE. The Contractor must perform this work upon receiving Coast Guard approval of the plan.

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.4 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard personnel perform an initial operational test of the exhaust stack system, to demonstrate existing operational condition. Submit a CFR.

3.5 Cleaning. The Contractor must clean the interior surfaces of the exhaust piping and stack uptakes to the MDE, shown on Coast Guard Drawings 175 WLM 259-001 and 175 WLM 259-005, to a condition

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free from soot, tar, and any other foreign matter as follows:

3.5.1 Disconnect the exhaust piping as necessary to facilitate cleaning.

3.5.2 Thoroughly sweep, mechanically clean, and vacuum the interior of each exhaust pipe system, including the mufflers, from the exhaust outlet to the topmost location outside the vessel. Clean all adjacent stack uptake surfaces. Ensure that all tar deposits, soot deposits, and all other surface contaminants are removed.

3.5.3 Remove all debris from the pipe surfaces, stack deck, and Engine Room areas by vacuuming. Dispose of all cleaning materials and generated debris in accordance with all applicable Federal, state, and local regulations.

3.5.4 Reassemble exhaust piping; renew all disturbed flange connection gaskets with suitable high temperature, non-asbestos-containing gasket materials; and renew all disturbed fasteners.

3.6 Inspection and report. The Contractor must perform a visual inspection of the following components: submit a CFR:

- Exhaust stack access hatches, including all associated studs and nuts.
- All cleaned exhaust stack surfaces.
- All exhaust expansion joints, including associated bolts.

3.6.1 Following cleaning of the interior of each exhaust pipe system, the Contractor must demonstrate completeness of the cleaning process to the Coast Guard Inspector, showing that the entire length of exhaust piping cleaned according to the work plan.

3.7 Touch-up preservation. The Contractor must prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.8 Operational test, post repairs. After completion of work, the Contractor must thoroughly test, in the presence of the Coast Guard Inspector and demonstrate the exhaust stack system to be in satisfactory operating condition. Submit a CFR

4.0 Renew Exhaust Insulation.

The Contractor shall renew the designated piping system insulation identified in Table 1 and refer to the relevant Coast Guard Drawings for guidance. Figures 1, 2 & 3 are partial excerpts from referenced CG Dwgs providing comprehensive technical information regarding exhaust system piping, fittings, fasteners and components.

**CAUTION**

**Although pipe lengths, routes & sizes are detailed in the specified drawings, the as-built configuration could vary somewhat.**

#### **4. NOTES**

This section is not applicable to this work item.

## WORK ITEM 27: Watertight Scuttle (External), Renew

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew watertight scuttle identified in Table 1

**TABLE 1 – WATERTIGHT SCUTTLE LOCATIONS**

DESCRIPTION	LOCATION	DRAWING
18 Inch QAWTS / 12” Combing	01 level Weather deck (01-87-1)	Scuttle - NAVSEA 803-1401892

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	18 in steel QAWTS (Raised 12 inch combing,	NAVSEA 803-1401892	1 ea.	\$9,500.00

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM-167-001, Rev L, Structural Closures

Coast Guard Drawing 175-WLM-601-001, Rev T, General Arrangement Inboard and Outboard Profiles

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020 Requirements for Preservation of Ship Structures

#### OTHER REFERENCES

Commercial Item Description (CID) A-A-59316, 2003, Abrasive Materials for Blasting

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The Society for Protective Coatings (SSPC)/NACE International (NACE) 2006, Joint Surface Preparation Standard SSPC-SP 10/NACE No.2, Near-White Blast Cleaning

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.11 (SSPC-SP 11), 2012, Power Tool Cleaning to Bare Metal

### 3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Removal and installation. The Contractor shall accomplish the following tasks for the scuttle assembly, designated in Table 1:

- Crop, remove, and dispose of the, existing scuttle, including its coaming.
- Install a new GFP scuttle assembly in place of the removed.
- Perform all necessary modifications to ensure the renewed scuttle assembly properly fits on its corresponding enclosure.
- Provide and install new hatch gaskets, and fasteners, as needed.

**NOTE**

**Geometric dimensioning and tolerance variances and minor hardware differences are to be expected with the Government-furnished closures. These variances and differences are not limited to the following: location and physical size of the hinge assemblies; location, physical size, and number of flush mounted pockets; location, size, and orientation of securing devices.**

3.2.2 Preservation. The Contractor shall prepare and coat all new and disturbed exterior and interior surfaces to match existing adjacent surfaces, refer to Table 2.

**CAUTION**  
**Do not paint knife-edges, gaskets, or any moving parts; including dogs, nuts, wedges, spindles, yokes, packing, connecting rods and hinge pins.**

**TABLE 2 – SURFACE PREPARATION AND COATING**

	STEEL		ALUMINUM	
	PREPARATION	COATING	PREPARATION	COATING
Top	SSPC-SP10/NACE No. 2, using grit conforming to MIL-A-22262 (1.5 to 2.5 mil anchor profile) -Or- SSPC-SP 11 (1.0 mil anchor profile)	Apply coating system specified for Freeboard/Superstructure/Mast (Freeboard/Superstructure, Steel), Option I”, in Appendix A (Cutter and Boat Exterior Painting Systems) of SFLC Std Spec 6310.	Brush blast to bare metal with clean, fine aluminum oxide, garnet or equivalent inert material conforming CID A-A-59316, Type I & IV (1.0-1.5 mil anchor profile). -Or- Power tool clan, using non-metallic abrasive padding, to remove all coatings and contamination.	Apply coating system specified for “Freeboard/Superstructure/Mast (Freeboard/Superstructure, Aluminum), Option I”, in Appendix A (Cutter and Boat Exterior Painting Systems) of SFLC Std Spec 6310.
Bottom	SSPC-SP 11 (1.0 mil anchor profile)	Apply coating system specified for “Door, Joiner, Option I” in Appendix B (Cutter and Boat Interior Painting Systems) of SFLC Std Spec 6310.	Power tool clan, using non-metallic abrasive padding, to remove all coatings and contamination.	Apply coating system specified for “Door, Joiner, Option I” in Appendix B (Cutter and Boat Interior Painting Systems) of SFLC Std Spec 6310.

3.2.3 Testing. Upon complete renewal of each structural closure, the Contractor shall perform the following boundary tests and submit a CFR in accordance with SFLC Std Spec 0740, Appendix C:

- Chalk test
- Water hose test

**NOTE**  
**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.3 Operational test – post repairs. After completion of work and in the presence of the Coast Guard Inspector, the Contractor shall thoroughly test and demonstrate the equipment listed below to be in satisfactory operating condition. Submit a CFR. Ensure the following:

- Closures are properly secured, so as to prevent accidental or unintentional movement.
- Securing latches adequately engage closures and positively lock into place without excessive force or manipulation by the operator.

#### 4. NOTES

4.1 Damage control markings. Coast Guard personnel will apply appropriate damage control decals onto all newly installed closure(s).

FIGURE 1-



## WORK ITEM 28: Sewage Deck Connections, Renew

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the Sewage Deck Connections.

1.2 Government-furnished property.

None

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 593-1, Rev G, Sewage & Waste Water System Diagram

Coast Guard Drawing 175-WLM 593-10, Rev -, Sewage/Waste Water System Shore Tie Deck Connection Mods

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Preserve Ship Structures

#### OTHER REFERENCES

The Society for Protective Coatings (SSPC) Surface Preparation Specification No. 16 (SSPC-SP 16), 2010, Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals

### 3. REQUIREMENTS

3.1. General.

3.1.1 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Sewage Piping.

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- Deck Penetration.
- Hand Rail, Over head, Insulation
- Deck Plate, Wire ways.

3.2 Work Location. The concerned work area is on the Main Deck, Port and Stbd sides. See the Coast Guard Drawings above, for guidance and details.

**NOTE:**

**Open, ventilate, and clean all spaces and components necessary to accomplish this work item as required to certify them as "SAFE FOR PERSONNEL" and/or "SAFE FOR HOT WORK."**

3.3. Protective measures. The Contractor shall furnish and install suitable covering to seal off and protect all non-affected surfaces/equipment and spaces in the vicinity of the work area against contamination during the performance of work. Upon completion of work, remove protective material and inspect for the presence of contamination. Clean all equipment and spaces, contaminated due to improper protection, to original condition of cleanliness.

3.4 Inspection and repair particulars. The Contractor shall accomplish the following tasks:

3.5 Piping Renew/Repair - The Contractor shall provide all necessary piping and fittings to facilitate the renewal / repair of the Sewage Discharge Deck Connections following designated by the CG Inspector located in Main Deck, both sides, as shown on Coast Guard Drawings.

- Remove, reinforce and renew the deck penetrations pieces.
- Repair the deterioration, damage section with steel pipe in according with Coast Guard Drawing 175-WLM 593-1 and 10.
- Install additional brackets and hangers as required.
- Install COV (flange ball valve) 4 inches above deck level on port & Stbd sewage risers.

3.5.1 Perform all weld in accordance with (SFLC Std Spec) 0740, Welding and Allied Processes.

3.5.2 When and where necessary, fabricate and install new pipe hangers in way of the permanently discarded hangers in accordance with General Requirements and CG Drawings 175-WLM 593-1 and 10.

3.5.3 All new piping shall be Galvanize Steel, in accordance with General Requirements and CG Drawings 175-WLM 593-1 and 10.

3.6 Hydrostatic test. After all authorized repairs, the Contractor shall hydrostatically test all new and disturbed piping and components of the system in accordance with SFLC Std Spec 0740, Appendix C, "Hydrostatic Test". Ensure zero leakage from or permanent deformation of pressure-containing parts by repairing all leaks, deformations, and discrepancies. Submit a CFR.

3.7 Operational test. In the presence of the Coast Guard Inspector, conduct an operational test of the renewed and affected piping system at normal operating system pressure/vacuum to verify tightness. Repair all leaks on disturbed connections.

3.8 Restoration and cleaning. After all sewage components have been reinstalled, clean surfaces

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of new and affected sewage components by locally swabbing, wiping, vacuuming, etc. to obtain surfaces reasonably free of contamination and any remaining residue on the surface does not interfere with system operations or damage system components and maintain sanitary conditions.

### **4. NOTES**

This section is not applicable to this work item.

## WORK ITEM 29: Directional Control Valve, Upgrade

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to upgrade the buoy chain winch by replacing a Directional Control Valve (DCV) and control equipment in the manifold on 175' WLM assets.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Directional Control Valve (DCV)	NSN: 4810-01-F19-5719 PN: 4WRE10E75-2X/G24K4/V	1 ea.	1748.00
N	Amplifier Card	NSN: 5996-01-F19-5720 PN: VT-VRPA2-2-1X/V0/T1	1 ea.	1552.00
N	Mating Connector, 4P G4WIF PG7 SW	NSN: 5935-01-F19-5722 PN: R900023126	1 ea.	46.00

\*Government-loaned property, which must be returned to the vessel upon completion of the availability.

\*\*New or refurbished equipment that the Government may provide for installation in place of existing equipment.

\*\*\*Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM-320-001, Rev AP, Electrical One-Line Diagram

Coast Guard Drawing 175-WLM-437-007, Rev R, Buoy Dk Control Sys Block, ISO & Elem Wrg Diag

Coast Guard Drawing 175-WLM-573-013, Rev -, Replacement DCV Amplifier Card Wiring Diagram

#### COAST GUARD PUBLICATIONS

Coast Guard Commandant Instruction (COMDTINST) 9077.1 (series), Equipment Lockout/Tags-Plus Instruction

Coast Guard Maintenance Procedure Card (MPC) A-A-14033, Dec 2017, Buoy Chain Winch Wire Rope Weight

Coast Guard Technical Publication (TP) 3498, SWBS 573, Aug 2019, Buoy Chain Winch Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

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Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2020,  
Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

### OTHER REFERENCES

None

### 3. REQUIREMENTS

#### 3.1 General.

3.1.1 CIR. The Contractor must submit a CIR for the inspections listed in the following paragraph(s):

- 3.4 Acceptance Testing

3.1.2 Tech Rep. The Contractor must provide the services of a Qualified Technical Representative who is familiar with the Directional Control Valve (DCV) and accompanying Rexroth equipment to accomplish the following on site:

- Advise on manufacturer's proprietary system information.
- Assist with installation and repair method(s).
- Ensure compliance with manufacturer's procedures and standards during system disassembly, inspection, and reassembly as applicable.

3.1.2.1 Ensure the Tech Rep has experience with the system/equipment stated above and demonstrated on their résumé.

3.1.2.2 Submit the name and résumé of the Tech Rep to the COR at the Arrival Conference.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Remove Existing Equipment. The Contractor must remove existing DCV parts by completing the following:

3.2.1 Secure valves. Secure hydraulic pressure lines on both sides of the existing DCV by closing valves HS-V-2-21-1 and HS-V-2-22-1 in HPU room.

3.2.2 Label existing wires. Label all wires entering the amplifier card holder according to the originating terminal for each lead. See Replacement DCV Amplifier Card Wiring Diagram drawing.

3.2.3 Label existing power supply wires. Label all wires entering the power supply according to the originating terminal (e.g. AC Input L/N, DC Output +/-) for each lead.

3.2.4 Disconnect existing. Secure breaker N on the 120V Machine Shop Lighting Panel (3-52-4) per CG drawing 175-WLM-320-001. Disconnect equipment as defined below.

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3.2.4.1 Disconnect wires where they enter the amplifier card holder (labeled in previous step) and pull back for later reinstallation.

3.2.4.2 Disconnect wires to the mounted power supply.

3.2.5 Remove existing. Remove equipment identified below:

3.2.5.1 Remove amplifier card, PN: VT5006, dispose of the card in accordance with local regulations.

3.2.5.2 Dismount card holder, PN: VT3002-1-2X/32D, from the enclosure and dispose of the card holder in accordance with local regulations. Set aside screws for later use.

3.2.5.3 Disconnect feedback sensor connector of cable from the end of the DCV. For 175' WLM assets, this cable is K-6EH1, LS3SJ-18.

3.2.5.4 Remove and dispose of the existing DCV feedback sensor cable in accordance with SFLC Standard Spec 3042.

3.2.5.5 Disconnect solenoid control cables K-6EH2 and K-6EH3 from the DCV. Set aside for later use.

3.2.5.6 Remove DCV, PN: 4WRE10W-64-12/24Z4/M. See Figure 1.

3.2.5.7 Remove the existing power supply from the enclosure and set aside hardware for later use.

3.3 Install Replacement Equipment. The Contractor must install new DCV parts by completing the following:

3.3.1 Mount DCV. Install the new DCV, PN: 4WRE10E75-2X/G24K4/V, and reconnect solenoid control cables K-6EH2 and K-6EH3.

3.3.2 Create and install feedback connector. Install the new mating connector, PN: 4P G4WIF PG7 SW, to the DCV.

3.3.2.1 Measure and cut the length of cable needed to run from the feedback mating connector to the amplifier card using existing cableways.

**NOTE**

**Recommended cable for the feedback mating connector is AlphaWire P/N 2829/4 but it can be replaced with any other cable which meets the following key specifications:**

- |                                    |  |
|------------------------------------|--|
| <b>- four conductors, shielded</b> | <b>- 18 AWG</b>                        |
| <b>- PTFE insulation</b>           | <b>- compliance with Std Spec 3042</b> |

3.3.2.2 Attach the DCV Mating Connector: 4P G4WIF PG7 SW to the new cable. See Figure 2.

3.3.2.3 Install and label the cable in accordance with SFLC Standard Spec 3042.

3.3.3 Install new power supply. Install replacement power supply in the same location.

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3.3.3.1 Mount the power supply in the same location as the previous supply, reusing the hardware set aside in step 3.2.4.7 if possible.

3.3.3.2 Reconnect AD and DC leads to the power supply.

3.3.4 Install new amplifier card. Install replacement card holder and amplifier card:

3.3.4.1 Mount the new card holder PN: VT3002-2X/48F in place of the original holder using hardware set aside in step 7.a.5.d above. See Figure 3.

3.3.4.2 Install the new amplifier card: PN: VT-VRPA2-2-1X/V0/T1.

3.3.4.3 Connect any remaining leads set aside in step 7.a.5 to the new amplifier card in accordance with Figures 4 and 5 below.

**TABLE 1 – FEEDBACK CABLE CONNECTIONS**

COND. #	COLOR	MATING CONNECTOR	TB B POSITION	AMP. CARD HOLDER
1	W	1	17	z18
2	BK	2	18	z12
3	R	3	19	z14
4	GR	4	20	z16
Shield	NONE	NONE	NONE	z10

3.4 Acceptance Testing. The Contractor must return the system to full functionality and test for operation. Submit a CIR.

3.4.1 Open hydraulic lines HS-V-2-21-1 and HS-V-2-22-1 in HPU room.

3.4.2 Remove Red Danger Tags IAW COMDTINST 9077.1 (series).

3.4.3 Reenergize all circuits following completion of work.

3.4.4 Test DC output of the new power supply for 24VDC using a voltmeter.

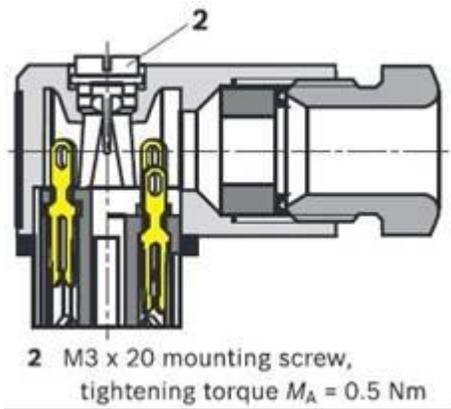
3.4.5 Test and run machinery and check for leaks.

3.4.6 If tests are unsatisfactory, perform amplifier card tests as described in Analog Amplifier Card VT-VRPA2--1X/V0/T Commissioning Instructions from Tech Pub 3498.

3.4.7 Perform a Static Load Test in accordance with MPC A-A-14033 to ensure the DCV operates safely under load.



**FIGURE 1. DCV TO BE REMOVED**



**FIGURE 2. MATING CONNECTOR SOLDER  
TERMINALS**



**FIGURE 3. CARD AND HOLDER MOUNTING  
POSITION**

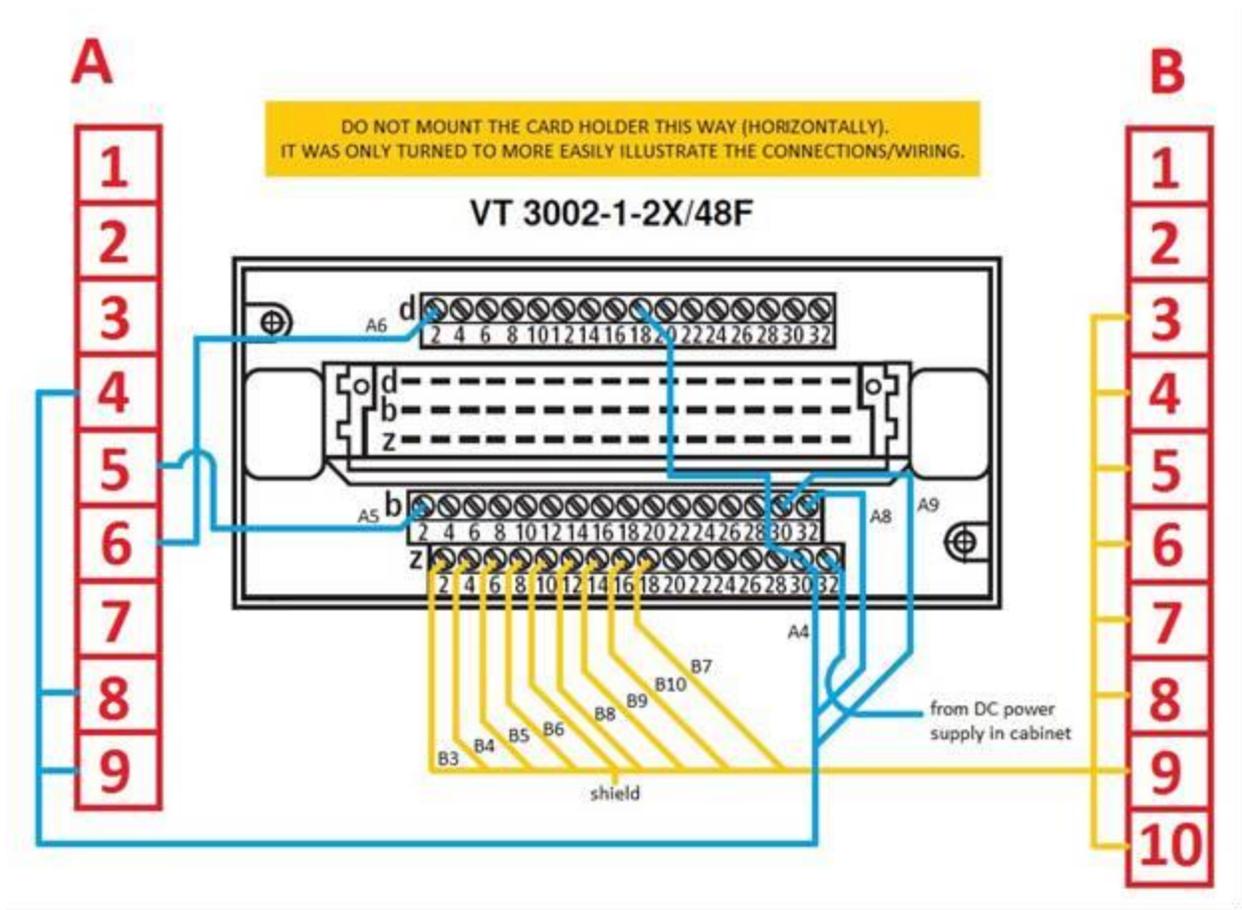
Pin assignment of blade connector

**These are the terminals the leads were connected to on the old card.**

Pin	Row d	Row b	Row z
2	Command value call-up 1 (24V input) <b>12c</b>	Command value 1 (potentiometer connection ±10 V) <b>14c</b>	Solenoid a+ <b>2a</b>
4	Command value call-up 2 (24V input)	Command value 2 (potentiometer connection ±10 V)	Solenoid a- <b>32a</b>
6	Command value call-up 3 (24V input)	Command value 3 (potentiometer connection ±10 V)	Solenoid b+ <b>2c</b>
8	Command value call-up 4 (24V input)	Command value 4 (potentiometer connection ±10 V)	Solenoid b- <b>32c</b>
10	Ramp call-up 1 (24V input) **	Command value inversion (24V input)	Shield (position transducer shield only) <b>28c</b>
12	Ramp call-up 2 (24V input) **	Reserved	Position transducer supply (- output) <b>term B18</b>
14	Ramp call-up 3 (24V input) **	Command value 5 + (10V)	Position transducer signal (- input) <b>term B19</b>
16	Ramp call-up 4 (24V input) **	Command value 5 - (-10V)	Position transducer signal (+ input) <b>term B20</b>
18	Enable (24V input) <b>22ac</b>	Reserved	Position transducer supply (+ output) <b>term B17</b>
20	Reserved	4-quadrant operation (24V input) **	System ground
22	Ready-for-operation signal (24 V, H-active, 50 mA) <b>24c</b>	Command value 6 + (4 to 20 mA)	Reserved
24	External ramp	Command value 6 - (4 to 20 mA)	Reserved
26	Reserved	Measuring point signal	Reserved
28	Reference/external ramp	Reference potential for outputs (M0)	Reserved
30	Command value output ± 10 V	- 10 V/20 mA <b>24a</b>	Operating voltage (24 V) <b>22ac</b>
32	Actual value output ± 10 V	+ 10 V/20 mA <b>26a</b>	L0 (0 V) <b>28ac</b>

**These should have been jumpered on the old card holder. Do the same here.**

**FIGURE 4. PIN ASSIGNMENTS: OLD TO NEW**



**FIGURE 5. CARD HOLDER WIRING DIAGRAM**

**4. NOTES**

This section is not applicable to this work item.

## WORK ITEM 30: Temporary Services, Provide - Cutter

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to provide temporary services to the Cutter, during the performance of this availability.

1.2 Government-furnished property.

None.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

None

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020,  
General Requirements

Surface Forces Logistics Center Standard Specification 8635 (SFLC Std Spec 8635), 2020,  
Temporary Services

#### OTHER REFERENCES

None

### 3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Temporary service particulars. The Contractor must provide the below listed temporary services, in accordance with SFLC Std Spec 8635.

**TABLE 1 - SERVICE SELECTION**

*SUB-PARAGRAPH	TITLE	Y/N
3.3.1	Office space	N
3.3.2	Telephone and internet access	N
3.3.3	Parking	N
3.3.4	Duty section berthing:	N
3.3.5	Electrical power (including all requirements in associated sub-paragraphs)	N
3.3.6	Hull grounding straps (not applicable when cutter is waterborne)	N
3.3.7	Compressed air (including all requirements in associated sub-paragraphs) During disruption of the ship's service air system.	Y
3.3.8	Hazardous material/hazardous waste disposal	N
3.3.9	Heavy lift equipment:	N
3.3.10	Water supply	
3.3.10.1	Potable water:	N
3.3.10.2	Hot-circulating water / mobile shower facility for duty section during P/W and disruptions.	Y
3.3.10.3	Cooling water	N
3.3.10.4	Firemain system (including all requirements in associated sub-paragraphs)	N
3.3.11	Steam (including all requirements in associated sub-paragraphs)	N
3.3.12	Refuse disposal	N
3.3.13	Sewage and grey water disposal (including all requirements in associated sub-paragraphs) (Contractor must provide three portable toilet units for exclusive crew use during sewage & P/W disruption.	Y
3.3.14	Storage – General (including all requirements in associated sub-paragraphs):	
3.3.14	Dry stores.	N
3.3.14	Paint and flammable stores.	N
3.3.14	Refrigerated stores.	N
3.3.15	Small boat storage (including all requirements in associated sub-paragraphs)	N

\*Each sub-paragraph number relates directly to the identical sub-paragraph number in SFLC Std Spec 8635.

**TABLE 2 - HAZARDOUS WASTE DISPOSAL – LIQUIDS (GALLONS)**

PAINT THINNERS	ENGINE COOLANT	BILGE WATER
Xx	xx	xx

**TABLE 3 - HAZARDOUS WASTE DISPOSAL – SOLIDS**

OILY FILTERS	OILY RAGS (LBS)	EMPTY 1-GAL CONTAINER*	EMPTY 5-GAL CONTAINER*	EMPTY 55-GAL CONTAINER*
xx	xx	xx	xx	xx

\*Previously housed hazardous materials.

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3.2 Extended temporary services. If the performance period of the contract is extended by the KO, the contractor must continue to provide all temporary services as specified herein for the extension period.

### **4. NOTES**

This section is not applicable to this work item.

## WORK ITEM 31: Crane Weight Harness, Renew

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the wiring harness for the CGC IDA LEWIS's crane system.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Cable, 3 shielded pairs	PN: 20265817	60 ft.	4.53/ft
N	Cable, 2 shielded pairs, 14 AWG	PN: 37-102-621	60 ft.	8.25/ft
N	Cable, 2 PR, 16 AWG	PN: 20260643	60 ft.	3.38/ft
N	Electrical Enclosure	PN: YMD-6896	1 ea.	
N	Connection Box, watertight	PN: YMD-10578	3 ea.	1,752.00

\*Government-loaned property, which must be returned to the vessel upon completion of the availability.

\*\*New or refurbished equipment that the Government may provide for installation in place of existing equipment.

\*\*\*Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

None

#### COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3630, SWBS 573, Nov 2022, Buoy Crane - Model SB230-42 - Operation, Maintenance and Repair Instructions

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2020, Shipboard Electrical Cable Test

Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2020, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

#### OTHER REFERENCES

None

### 3. REQUIREMENTS

#### 3.1 General.

3.1.1 CIR. The Contractor must submit a CIR for the inspections listed in the following paragraph(s):

- 3.4 Post Renewal Testing.

3.1.2 Tech Rep. The Contractor must provide the services of an OEM authorized/ licensed Tech Rep for the Appleton Marine Buoy Crane to accomplish the following on site:

- Provide manufacturer's proprietary system/ equipment information, software, and tools.
- Assist with and ensure compliance with manufacturer's procedures and standards during disassembly, inspection, repair, modification, calibration, and reassembly of the equipment/system.

3.1.2.1 Ensure the Tech Rep is an OEM Certified Representative for the system/equipment stated above and demonstrated on their résumé.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.1.5 Electrical work. The Contractor must accomplish all electrical work in accordance with SFLC Std Spec 3042, and test cables in accordance with SFLC Std Spec 3041. Utilize the existing wire ways for new cable runs as much as possible.

3.2 Remove old. The Contractor must remove components identified for renewal with reference to Appleton drawing AMD-1112 on page 257 of CG TP 3630, SWBS 573A:

3.2.1 Cable. Remove boom and turret electrical cable types identified by the Tech Rep as requiring replacement due to wiring errors/mislabeled/damage. These are cable #5, 6, and 7 shown in Appleton drawing AMD-1112. See Figure 1 for an estimation of which cables require replacement.

3.2.2 Junction boxes. Remove brass junction boxes, labeled as #1 in in Appleton drawing AMD-1112. See Figure 1.

3.2.3 Enclosure. Remove enclosure, labeled as item #33 in Appleton drawing AMD-1112. See Figures 1 and 2.

3.3 Install new. The Contractor must install new components identified for renewal:

3.3.1 Enclosure. Install new enclosure, item #33 in Appleton drawing AMD-1112. See Figures 1 and 2.

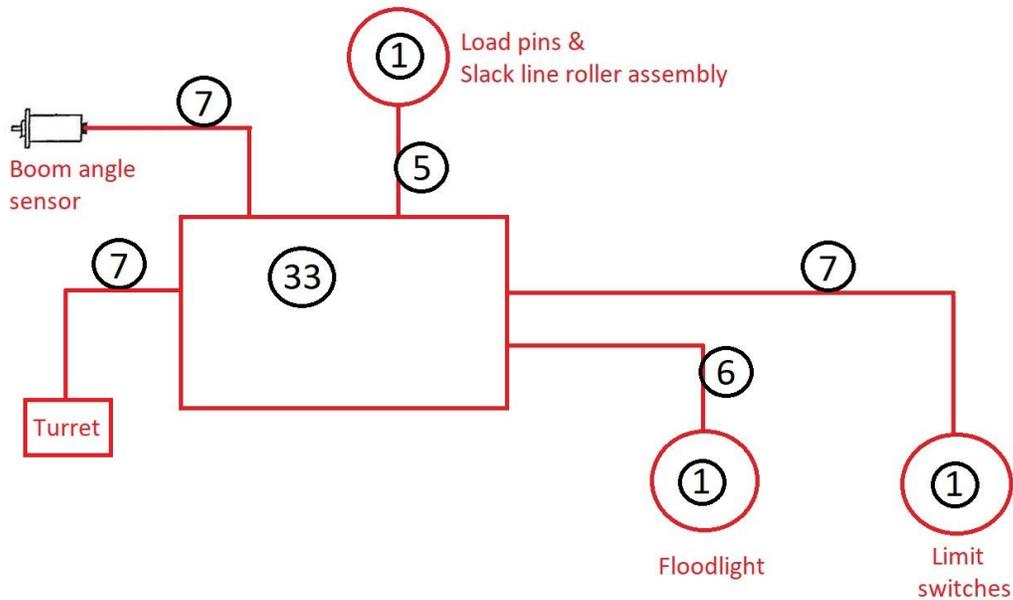
3.3.2 Junction boxes. Install new brass junction boxes, labeled as #1 in Appleton dwg AMD-1112, See Figure 1.

3.3.3 Cable. Install new cable types to replace items #5, 6, and 7 shown in Appleton drawing AMD-1112. See Figure 1.

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- PN: 20265817 replaces cable #5
- PN: 37-102-621 replaces cable #6
- PN: 20260643 replaces cable #7

3.4 Post Renewal Testing. After completion of all other work, the Contractor must perform a no-load operational test and rated load weight test as specified in CG TP 3630, SWBS 573A, Chapter 6. Do not raise pump compensator for any load test. Submit a CIR.



**FIGURE 1. COMPONENTS BEING RENEWED**

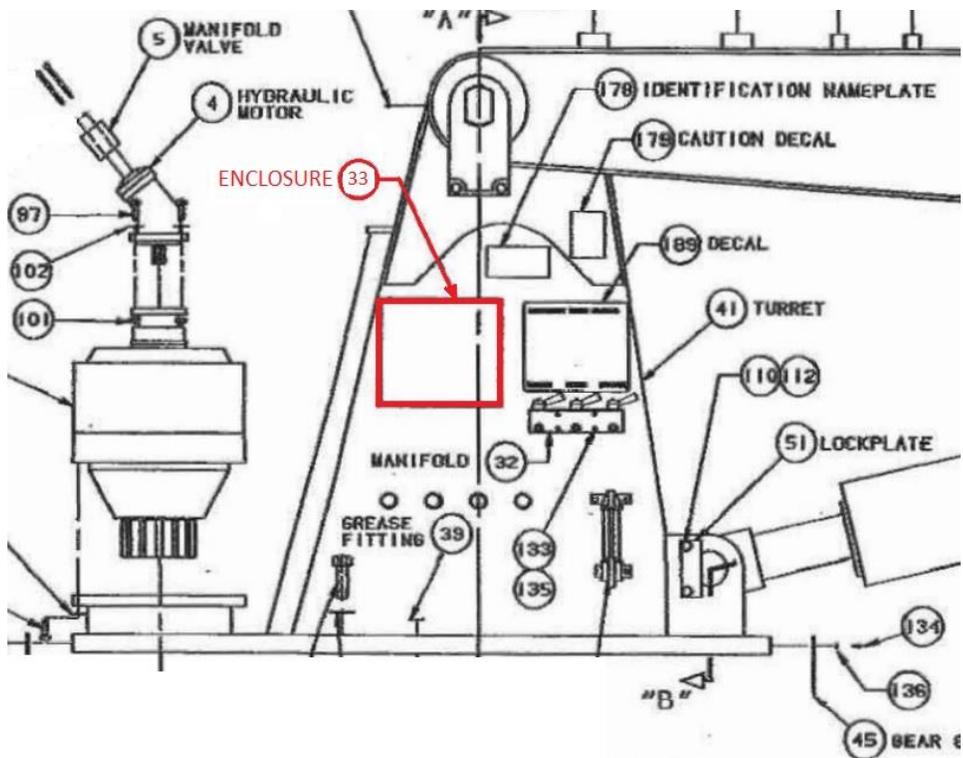


FIGURE 2. ENCLOSURE #33 (YMD-6896) LOCATION

#### 4. NOTES

This section is not applicable to this work item.

## WORK ITEM 32: Weather Deck Drain, Repair

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to unclog and /or repair designated weather-deck drain piping, located at 03-78-2 weather-deck. (Drainpipe transverses through compartment 1-76-2 and ties into 1<sup>st</sup> deck drain.

1.2 Government-furnished property.

None.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 528-2, Rev H, Weather Deck Drains Diagram

Coast Guard Drawing 175 WLM 533-003, Rev G, Potable Water System A/D Hull Block 910, 920, 930, 940, 950

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

#### OTHER REFERENCES

The Society for Protective Coatings (SSPC)/NACE Joint Surface Preparation Standard SSPC-SP 10/NACE No.2, 2004, Near-White Blast Cleaning

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.11 (SSPC-SP 11), 2004, Power Tool Cleaning to Bare Metal

### 3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

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The Contractor must conduct an internal inspection of the drain piping and submit a CIR.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Ventilation Ducting
- Piping
- Insulation / Sheathing
- Electrical wiring

3.2 Drain pipe repair. The Contractor shall perform all tasks specified in SFLC Std Spec 074 and herein, to renew the drain in the locations specified in Coast Guard Drawing 175-WLM 528-2 and 175-WLM 528-9.

**NOTE**

**The affected piping does not drain freely. The intent of this work item is to internally inspect the entire deck drainpipe and clear the obstruction/s and repair the pipe as necessary to allow water to drain freely.**

3.2.1 Piping renewal particulars. In the event that sections of the piping require repair or renewal, the Contractor must accomplish the following tasks, using Coast Guard Drawings WLM 175-WLM -528-2 and 175-WLM -528-9 as guidance.

3.2.1 Where possible, cut all edges along existing seams. Corners shall intersect plating seams at 90 degree angles. Corners that are not formed by designed plating seams shall have a minimum radius of, three inches, or one-eighth of the transverse dimension of the cut, whichever is greater.

3.2.2 Ensure that welding does not warp or cause any distortion to adjacent plating.

3.2.3 Work areas are in at the port side. 03-78-2. The piping goes down through the EDG compartment 02-68-0E then goes through berthing compt. 1-76-2 to 1st deck to drain tie.

1.2.3.1 Inspect drain pipe for obstructions and / or deterioration. Submit CIR

3.3 Crop out and retain the sections of piping for used as templates in accordance SFLC Std Spec 0740.

3.4 Renew deteriorated sections and / or clear blockages in the deck drain pipe in accordance with SFLC Std. Spec 0740 and Coast Guard Drawing 175-WLM 528-2 and 175-WLM 528-9.

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3.5 Fabricate / Renew grating cover in accordance with Coast Guard Drawing 175-WLM 528-2 and 175-WLM 528-9.

### 3.6 Weld Joint Inspections:

3.6.1 In the presence of the Coast Guard Inspector, visually inspect and perform a magnetic particle test on 10% all new welds in accordance with AWS D1.1. Test acceptance standards shall be in accordance with AWS D1.1. Repair all weld deficiencies and retest.

3.6.2 Upon completion of all welding, perform a liquid film bubble emission test on all watertight boundaries (hull plating welds) in accordance with SFLC Std Spec 0000.

3.7 The Contractor must provide a written report of all nondestructive test findings to the Contracting Officer Representative via the CFR process.

3.8 Surface Preparation – Upon completion of successful nondestructive testing, prepare all new and disturbed exterior / interior areas in accordance with SSPC-SP-3. Feather the surrounding surfaces to obtain a 3-inch wide smoothly tapered boundary from the existing paint to the prepared surface

3.8.1 Prior to applying any paint, remove all dust, grease, oil, or other contaminants from all prepared areas in accordance with applicable local, state, and federal laws and regulations.

3.8.2 The Coast Guard Inspector will verify all surface preparation.

3.8.3 Upon verification from the Coast Guard Inspector on all surface preparation, prime and coat all prepared surfaces to match existing adjacent surfaces in accordance with the applicable sections of General Requirements. For surfaces to be covered with insulation, apply primer coats only.

3.9 Testing. After all work has been completed, the Contractor shall, in the presence of the Coast Guard Inspector, accomplish the following tasks, and submit a CFR:

3.9.1 Leak test. After completing all authorized mechanical (i.e. threaded, bolted, etc.) joint repairs, the Contractor must apply a vacuum or pressure of 2 psig in accordance with SFLC std spec 0740.

3.9.2 Operational test, post repairs. After completion of work, the Contractor shall thoroughly test, in the presence of the Coast Guard Inspector and demonstrate all items or shipboard devices that have been disturbed, used, repaired, altered, or installed to be in satisfactory operating condition. Submit a CFR.

## 4. NOTES

## **WORK ITEM 33: Auxiliary Seawater (ASW) System Piping, Renew**

### **1. SCOPE**

1.2 Intent. This work item describes the requirements for the Contractor to inspect the ASW supply piping and replace up to 15 linear feet of deteriorated piping and bronze gate valves as required.

1.2 Government-furnished property.

None.

### **2. REFERENCES**

#### **COAST GUARD DRAWINGS**

Coast Guard Drawing 175-WLM 256-001, Rev J, Seawater Cooling System Diagram

Coast Guard Drawing 175-WLM 256-003, Rev D, Seawater Cooling System Frame 61 FWD, Blocks 910, 920, & 930

Coast Guard Drawing 175-WLM 256-004, Rev J, Seawater Cooling System A&D, Hull Blocks 940-970

Coast Guard Drawing 175-WLM 256-012, Rev B, ASW System Piping Modifications

Coast Guard Drawing 175-WLM 601-003, Rev N, Booklet of General Plans

#### **COAST GUARD PUBLICATIONS**

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

#### **OTHER REFERENCES**

None.

### **3. REQUIREMENTS**

3.1 General.

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### 3.1.1 CIR.

None.

### 3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Deck plates
- Piping
- Insulation
- Piping fluid contents

3.1.5 Fluid handling. The Contractor shall drain and dispose of all residual fluids in the piping system in accordance with all Federal, state, and local rules and regulations.

3.1.6 Operational test, initial. Prior to commencement of work, the Contractor shall witness Coast Guard personnel perform an initial operational test of all items or shipboard devices to be disturbed, used, repaired, or altered, to demonstrate existing operational condition. Submit a CFR.

3.2 Renewals. The Contractor shall renew the piping sections designated above in accordance with SFLC Std Spec 0000 and SFLC Std Spec 0740. Refer to the Coast Guard drawings listed in Section 2 "References" and the figures in Section 4 "Notes" for additional guidance.

3.2.1 Inspect up to 15 linear ft of ASW piping and take 15 UT measurements in areas designated by the CG inspector. Submit a CFR.

3.2.1.1 Remove known deteriorated sections of ASW piping as designated by the CG Inspector. Dispose of removed piping in accordance with all Federal, state, and local rules and regulations.

3.2.2 Install temporary caps or plugs to the open piping upon removal to prevent system/components and surrounding area from contamination.

3.2.3 Inspect the surrounding piping for signs of deterioration and/or corrosion. Submit a CFR.

3.2.4 Renew all designated sections of CuNi auxiliary seawater (ASW) cooling piping, including associated fittings.

3.2.4.1 For ASW pump discharge piping, relocate the discharge piping to the opposite side of the piping located in the bilge as directed by the CG Inspector. Renew the designated section of piping, fittings (two elbows), and connections for the gauge lines.

3.3 Pipe flushing. After all authorized work is completed; the Contractor shall accomplish the following:

3.3.1 Flush all new and disturbed ASW piping with clean fresh water for five minutes, or until all debris is removed, whichever occurs first.

3.3.2 Ensure that flushing fluid is directed to move scale and foreign debris away from installed machinery to prevent possible damage upon operational testing.

3.3.3 Submit a CFR documenting date and time of flushing process, and verification of piping cleanliness.

3.3.4 Dispose of flushing fluid in accordance with all applicable Federal, state, and local regulations.

**NOTE**

**Do not drain any fluids, including fresh water, into any space, bilge, or exterior location.**

3.4 Hydrostatic test. After all authorized repairs, the Contractor shall hydrostatically test all new and disturbed piping and components of the ASW piping system in accordance with SFLC Std Spec 0740, Appendix C, "Hydrostatic Test". Ensure zero leakage from or permanent deformation of pressure-containing parts by repairing all leaks, deformations, and discrepancies. Submit a CFR.

3.5 Operational test, post repairs. After completion of work and in the presence of the Coast Guard Inspector, the Contractor shall thoroughly test and demonstrate the ASW piping to be in satisfactory operating condition. Submit a CFR.

- Ensure zero visible leakage from piping connections.

**NOTE**

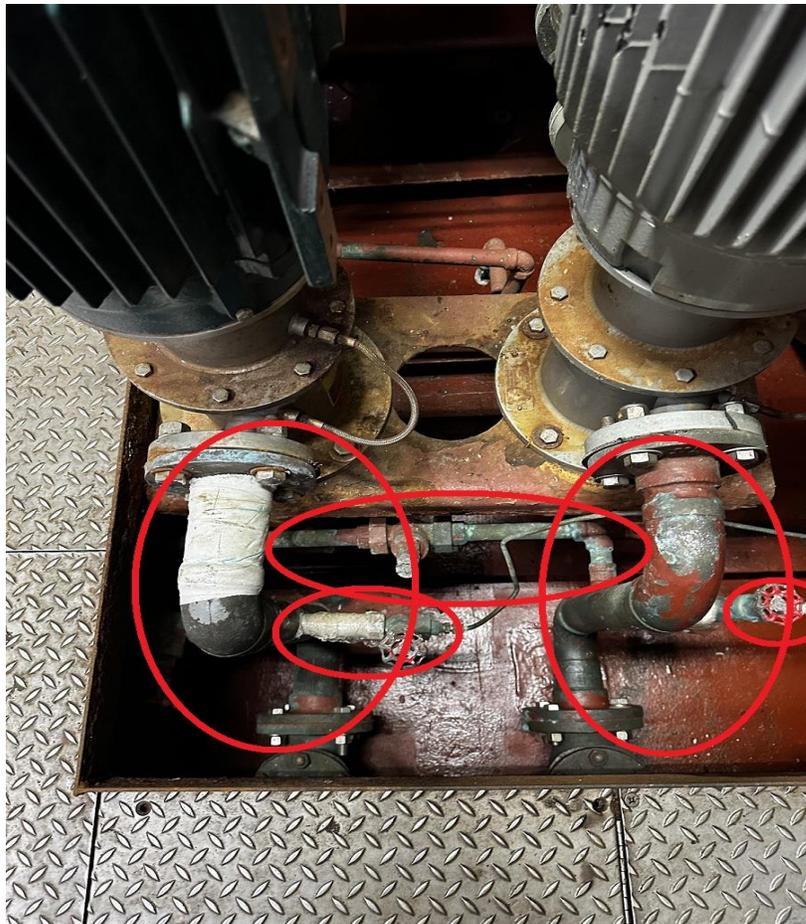
**Coast Guard personnel will operate all shipboard machinery and equipment.**

3.6 Touch-up preservation, general. The Contractor shall prepare and coat all new and disturbed ASW piping surfaces, as applicable, to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

## 4. NOTES

4.1 Figures.

**FIGURE 1: EXISTING ASW PUMP DISCHARGE PIPING**



## WORK ITEM 34: Mechanical Remote Valve Operators, Renew

### 1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to restore functionality the mechanical remote valve operators as specified in Table 1.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Deck Box: ¾ size w/10 turns, weld-in, cam-lock cover included	BFG P/N: VCDB-1200-10	15 ea.	576.00
N	90deg Gear Box: ¾ size, bronze	BFG P/N: VCG-3200	7 ea.	402.00
N	Consolidated Hinged Joint: ¾ size, manganese bronze housing, sst shafts	BFG P/N VCK-1200	2 ea.	439.95
N	U-Joint 1-3/4in OD x 3/4in bore, steel	BFG P/N VCU-1142	18 ea.	110.99
N	Valve Coupling Rising Handwheel, ¾ inch male	BFG P/N: VCU-3200	5 ea.	82.75
N	Valve Coupling Rising Stem, ¾ inch male	BFG P/N: VCM-2200	2 ea.	139.00

\*Government-loaned property, which must be returned to the vessel upon completion of the availability.

\*\*New or refurbished equipment that the Government may provide for installation in place of existing equipment.

\*\*\*Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.

### 2. REFERENCES

#### COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 505-002, Rev F, Mech Remote Valve Oprs A & D

#### COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020,  
General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020,  
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Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020,  
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### OTHER REFERENCES

Compartment Check Off List: WLM 175 – 551 (IDA LEWIS)

### 3. REQUIREMENTS

3.1 General. The intent of this Work Item is for the contractor to restore functionality to the mechanical remote valve operators listed in Table 1. The remote valve operators are non-operational due to various reasons (ex: deck box covers seized/glued in place, deck-boxes not spinning, linkages disconnected from valves, valve couplings are cracked, linkage rods are bent, etc.). See Figures 1 – 4 for typical images of the remote valve operators. All major parts needed to restore functionality to the remote valve operators were identified by ships force and will be provided as GFE.

#### 3.1.1 CIR.

None.

#### 3.1.2 Tech Rep.

None.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Tiles.
- Decking.
- Deck coating.
- Structure.
- Sheathing.
- Piping.
- Cables.
- Foundations

#### NOTES

**The deck coating system will be renewed via separate Work Item titled Deck Covering, Interior, Wet and Dry, Renew.**

3.2 Restore Functionality. The Contractor must verify that all the mechanical remote valve operators, listed in Table 1, are fully functional in accordance with Coast Guard Drawing 175 WLM 505-002.

**NOTES**

**Common components of mechanical valve remote operators may include:  
Deck-boxes, rigid rods, weld sleeves, hinges, valve couplings, hand-wheel  
adaptors, gear boxes, U-joints, U-bolts, hangers, stuffing boxes.**

3.2.1 Major hardware that must be renewed in each remote valve operator subassembly are annotated on Table 1 and are provided as GFP.

3.2.2 Existing parts/hardware that are currently in service may be reused unless specifically identified as a renewal part in Table 1.

3.2.2.1 Submit a CFR if additional major hardware requires renewal.

3.2.3 Minor hardware (nuts, bolts, washers, etc) needed to re-assemble the subassemblies must be provided by the contractor.

3.2.4 Reconfigure and adjust the remote valve operator subassemblies as needed to run smoother. Subassemblies explicitly that must be reconfigured and adjusted are annotated in Table 1.

3.2.5 Perform all welding and inspections in accordance with SFLC Std Spec 0740.

3.3 Touch-up preservation. The Contractor must prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, (Touch-ups and minor coating repairs.)

3.4 Operational test, post repairs. After completion of work, the Contractor must thoroughly test, in the presence of the Coast Guard Inspector and demonstrate all items or shipboard devices that have been disturbed, used, repaired, altered, or installed to be in satisfactory operating condition. Submit a CFR.

**NOTE**

**Coast Guard personnel will operate all shipboard machinery and equipment.**

#### **4. NOTES**

The Compartment Check Off List (CCOL) shows all the remote operator in the area for each compartment of the cutter. The CCOLs are posted at each compartment throughout the cutter.

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**TABLE 1 – RENEWAL ITEMS FOR MECHANICAL REMOTE VALVE OPERATORS**

DWG SUBASSY	VLV LABEL	DECK BOX	GEAR BOX	HINGE JOINT	U-JOINT	VLV CPL (GLOBE)	VLV CPL (GATE)	RE-CNFGR
<b>BFG P/N →</b>		VCDB-1200-10	VCG-3200	VCK-1200	VCU-1142	VCM-3200	VCM-2200	
S3	MD-V-3-23-4	1						
Renew (1x) Deck Box.								
S4	MD-V-2-23-9	1						X
Renew (1x) Deck Box. Reconfigure linkage from deck box to 1 <sup>st</sup> gear box to operate smoother.								
S5	MD-V-2-23-3	1						
Renew (1x) Deck Box.								
S6	MD-V-2-23-2	1						
Renew (1x) Deck Box.								
S7	MD-V-3-25-5	1						
Renew (1x) Deck Box.								
S8	MD-V-2-23-7	1			2	1		
Renew (1x) Deck Box. Renew (2x) corroded U-Joints. Renew (1x) Valve Coupling.								
S9	MD-V-3-23-1	1						
Renew (1x) Deck Box.								
S10	FM-V-2-21-4	1	1					
Renew (1x) Deck Box. Renew (1x) 90° Gear Box.								
S11	MD-V-2-22-2							X
Reconfigure linkages to turn operate smoother.								
S12	FM-V-2-62-2			1	2	1		
Renew (1x) Consolidated Hinged Joint. Renew (2x) corroded U-Joints. Renew (1x) Valve Coupling.								
S13	FM-V-3-80-1					1		
Renew (1x) Valve Coupling.								
S14	MD-V-2-81-1	1			2	1		
Renew (1x) Deck Box. Renew (2x) corroded U-Joints. Renew (1x) Valve Coupling.								
S15	MD-V-3-62-1				2			X
Renew (2x) corroded U-Joints. Reconfigure linkages to turn operate smoother.								
S16	MD-V-1-82-2		2					
Renew (2x) 90° Gear Boxes.								
S17	MD-V-3-77-2	1		1				X
Renew (1x) Deck Box. Renew (1x) Consolidated Hinged Joint. Reconfigure linkages to turn operate smoother.								
S21	MD-V-3-79-2							X
Reconfigure linkages to turn operate smoother.								
S22	MD-V-2-62-2		2					
Renew (2x) 90° Gear Boxes.								
S23	MD-V-2-64-2		1		8		1	
Renew (1x) 90° Gear Box closest to valve. Renew (8x) corroded U-Joints. Renew (1x) Valve Coupling.								
S24	FM-V-3-79-1	1						
Renew (1x) Deck Box.								
S25	MD-V-3-88-1	1						X
Renew (1x) Deck Box. Reconfigure linkage closest to valve to turn operate smoother.								
S26	FM-V-2-88-3	1				1		
Renew (1x) Deck Box. Renew (1x) Valve Coupling.								
S27	MD-V-2-81-1	1			2		1	X
Renew (1x) Deck Box. Renew (2x) corroded U-Joints. Renew (1x) Valve Coupling. Reconfigure interfering linkage.								
S28	MD-V-2-22-2	1	1					
Renew (1x) Deck Box. Renew (1x) 90° Gear Box.								



**FIGURE 1 – EXAMPLE OF DECK BOXES ON BOUY DECK**



**FIGURE 2 – EXAMPLE OF DECK BOXES ON INSIDE SUPERSTRUCTURE**



**FIGURE 3 – EXAMPLE OF REMOTE VALVE OPERATORS UNDERNEATH BOUY DECK**



**FIGURE 4 – EXAMPLE OF REMOTE VALVE OPERATORS IN ENGINE ROOM**