USCGC TERRAPIN (WPB 87366)

SPECIFICATION FOR DOCKSIDE REPAIRS

FY2027

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(Rev-0, 9 June 2026)

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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

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

None

COAST GUARD PUBLICATIONS

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

Coast Guard Technical Publication (TP) 4573, Coolant Heating System, 17 March 2003

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 5550 (SFLC Std Spec 5550), 2022, Fire Prevention and Response

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

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

Installation of MTU Electronic Systems E 530 606/06E

MTU 8V 396 TE.4 Maintenance Manual M020046/21E

MTU 8V 396 TE94 Description and Operation Manual M011511/00E

MTU 8V 396 TE94 Parts Catalog M033971/00DE, Order #771903

MTU 8V396 TE.4 Tolerances & Wear Limits List M070026/00E

MTU Customer Connecting System CCS for ECS 396, E 531 415/00EMTU Electrical Start Device SUE-ES for ECS 396, E 531 482/00E

MTU Customer Connecting System CCS for ECS 396, E 531 416/00E

MTU Electrical Start Equipment SUE-ES Illustrated Parts Catalog E 535 187/00ED

MTU Engine Control System Illustrated Parts Catalog E 535 145/01ED

MTU Engine Management System Typ ECS 396/S Version E & F with ETB 4E/ETB 4F Document numbers; E 531 406/01 E, E 531 405/ 01E & E 531 403/02E

MTU Exhaust Turbocharger ZR140 M040052/10E

MTU Fluids and Lubricants Specification A001061/35E

MTU Junction Box CCS-ECS 396E Illustrated Parts Catalog E 535 151/01ED

MTU Local Operating Panel for ECS E 531 301/01E

MTU Local Operating Panel LOP-ECS Illustrated Parts Catalog E 535 297/02ED

MTU Monitoring & Control Unit Documentation E 535 164/00ED

MTU Service Information 396-99/0562B Electric Governor Actuator with Oil Drain

MTU Solenoid Actuator, Description, Assembly Instructions M040082/10E

MTU Tool List M004021/20DE

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

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.

WORK ITEM	MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
1	Y	Cylinder Head	NSN: 2815-12-345-1076	16 ea.	3274.71
1	Y	"A" Bank Turbocharger	NSN: 2950-12-347-2009	2 ea.	12,642.58
1	Y	"B" Bank Turbocharger	NSN: 2950-12-347-2010	2 ea.	11,050.16
1	Y	Sea Water Pump	NSN: 2930-12-344-4810	2 ea.	15,086.29
1	Y	Jacket Water Pump	NSN: 2930-12-344-4606	2 ea.	3799.67
1	Y	Starter	NSN: 2920-12-156-2556	2 ea.	3255.35
1	Y	**Charge Air Cooler	NSN: 2930-12-354-2436	2 ea.	32,974.85
1	Y	**Injector with retainer	NSN: 2910-12-341-9988	16 ea.	706.45
1	N	**Cylinder Liner	NSN: 2815-12-315-7282	16 ea.	1103.14
1	N	**Piston	NSN: 2815-12-362-8999	16 ea.	3816.34
1	N	Engine Acceptance Test Record	N/A	1/MDE	N/A

***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

This section is not applicable to this package.

PRINCIPAL CHARACTERISTICS

87' WPB	
PHYSICAL	
Length overall	87'
Length between perpendiculars	81' 7"
Depth	10' 11"
Maximum beam	19.4'
Draft, mean to design waterline	5' 9"
Height of highest projection	50.2'
Full load displacement	93.5 long tons
Minimum operating displacement	83.9 long tons
Displacement, light ship	77.9 long tons
Framing	Longitudinal
Bulkheads	Four watertight bulkheads located below the Main Deck
Anchor	40 lb Fortress with 480 ft. 3 strand 5/8" dia. Line stayset
HULL	
Hull/main weatherdeck material	ABS Grade AH 36
Superstructure	5086 Aluminum
MACHINERY	
Main propulsion	Two MTU 8V396TE94, sequential turbo-charged diesels
Reduction gears	Two ZF Type BW 255
Propulsion shaft	Two AQUAMET 22, 101.6mm
Shaft diameter	4"
Shaft seal	Two Chesterton mechanical seals
Shaft bearing, intermediate	Thordon Elastomeric Bearing
Shaft bearing, aft	Thordon Elastomeric Bearing
Number of propellers	2
Number of blades	5
Diameter of propeller	1040mm
Pitch	1230 mm fixed
Shaft RPM	828
Rudders	Two 316L Stainless Steel
Ship's service generators	Two Man Model D08241F01 diesel with Stanford 60KW Generator
TANK CAPACITIES	
3-9-1-f (fuel oil)	1402 gal
3-9-2-f (fuel oil)	1402 gal
3-12-2-f (waste oil)	86 gal
3-12-1-f (oily water)	86 gal
3-7-0-q (sewage collection)	352 gal
3-7-1-q (grey water)	52 gal
3-12-1-w (fresh water)	200 gal
3-12-2-w (fresh water)	200 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), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 5550 (SFLC Std Spec 5550), 2022, Fire Prevention and Response

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

Code of Federal Regulations (CFR) Title 29, Part 1915, Occupational Safety and Health Standards for Shipyard 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 requirements in 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.

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 Contractor-provided fire watch personnel. The Contractor must provide fire watch personnel and equipment.

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.

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 "measurement" 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.

3.5 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 facilities. The Contractor must provide and maintain environmental protection as defined in SFLC Std Spec 0000 Appendix B, Requirements for Environmental Protection at USCG 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 the Coast Guard Facility will be provided upon award.

3.5.1.2 Plans and permits. The CG Facility 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 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 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. Approved updates to the 2022 SFLC Standard Specifications will appear here.

3.7.1 SFLC Standard Specification 5550: Replace paragraph 3.11.3 to state, "Material supporting imminent work shall be brought on the cutter and stored where the work is being performed. Material that appreciably contributes to fire load shall be removed at the end of each work shift when personnel are not present. Trash, debris, and packaging materials shall be promptly removed from the vessel at the end of each work shift and not allowed to accumulate." Advance the paragraph numbering of the Fire Prevention and Safety Inspection form to 3.11.4.

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.

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

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

CHECKPOINT 1 – COATING SYSTEM COMPLIANCE	
	Ensure all coatings are in compliance with SFLC Std Spec 6310, Appendix C.
CHECKPOINT 2 - PAINT STORAGE	
	Ensure all coatings are kept at a temperature of 65 to 85°F at all times, unless otherwise specified by the coating mfg.
CHECKPOINT 3 - AMBIENT CONDITIONS	
	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.
CHECKPOINT 4 - PRE-SURFACE PREPARATION	
	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.
CHECKPOINT 5 - SURFACE PREPARATION	
	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).
CHECKPOINT 6 - PRIMER COAT APPLICATION	
	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.
CHECKPOINT 7 – STRIPE COAT APPLICATION	
	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).
CHECKPOINT 8 – TOP COAT APPLICATION	
	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.
CHECKPOINT 9 – FINAL INSPECTION	
	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: /
CHECKPOINT 10 – RECORD KEEPING	
	Complete, sign, and submit all provided QA Inspection Forms.

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

QA-2 - QUALITY ASSURANCE INSPECTION FORM
(ENVIRONMENTAL READINGS)

VESSEL NAME	HULL #	WORK ITEM #	WORK ITEM TITLE

Use one sheet for each activity. Record conditions every four hours from before surface preparation to application of final coating system coat.

DATE & TIME	ACTIVITY (SURFACE PREPARATION, PRIMER COAT, BARRIER COAT, TOP COAT, ETC…)	LOCATION (FRAME & DECK, RELATION TO EQUIPMENT, ETC.)	TEMPERATURE				% REL. HUMID-ITY
			DEW PT.	SURFACE	AMBIENT	ΔT | DP - SURFACE |	

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

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/AMPP No. 2	☐			
SSPC-SP WJ-2/AMPP WJ-2	☐			
SSPC-SP-3	☐			
SSPC-SP-11	☐			
SSPC-SP-11 (inaccessible area)	☐			
Brush-blasting (non-metallic substrate)	☐			
ABRASIVE MANUFACTURER:		**ABRASIVE SIEVE SIZE:**		

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.

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):
MEAN MIL READING (IAW ASTM D4417-METHOD C) FOR ABOVE 15 READINGS:		

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

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/AMPP No. 2	☐			
SSPC-SP WJ-2/AMPP WJ-2	☐			
SSPC-SP-3	☐			
SSPC-SP-11	☐			
SSPC-SP-11 (inaccessible area)	☐			
Brush-blasting (non-metallic substrate)	☐			
ABRASIVE MANUFACTURER:		**ABRASIVE SIEVE SIZE:**		

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

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

QA-4 - QUALITY ASSURANCE INSPECTION FORM
(SURFACE SOLUBLE SALT CONDUCTIVITY LOG)

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

SOLUBLE SALT CONDUCTIVITY MEASUREMENTS IAW SSPC-GUIDE 15.		
DATE	**TEST LOCATIONS**	**CONDUCTIVITY (MICROSIEMENS/CM)**

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

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/AMPP INSPECTOR	SIGNATURE	CERT. #	DATE / TIME
NAME OF CG REPRESENTATIVE	SIGNATURE	UNIT	DATE/TIME

4.2 Tank and Void Assessment form.

SFLC-ESD-25

PRINT RESET

TANK AND VOID ASSESSMENT FORM

GENERAL DATA	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:

ACCESS DATA	
Manhole and cover condition:	Tank Penetration Condition:

VENT OVERFLOW DATA		
Present: ◯Yes ◯No	Check Valve Installed: ◯Yes ◯No	Check Valve Operates Properly: ◯Yes ◯No

LADDER DATA		
NR of Ladder(s) Present: ◯Yes ◯No	Ladder Damaged: ◯Yes ◯No	Ladder Material:

TANK LEVEL INDICATOR (TLI) DATA		
TLI Present in Tank: ◯Yes ◯No	TLI Damaged: ◯Yes ◯No	TLI Type:

SOUNDING TUBE DATA			
Sounding Tube Present in Tank: ◯Yes ◯No		Sounding Tube Damaged: ◯Yes ◯No	
Striker Plate Damaged (>50%): ◯Yes ◯No			

CATHODIC PROTECTION DATA		
Cathodic Protection in Tank: ◯Yes ◯No	Total Zincs:	Number of Zincs > 50% Depleted:

	1-6		Cleanliness & Housekeeping
Clean to light layer or residue		1-2 (G)	Comments:
Loose accumulation scale		3-4 (Y)	
Impending residue and sediments		5-6 (R)	

	%	1-6		Coating Systems
All Painted Surfaces			1-2 (G)	Comments:
			3-4 (Y)	
			5-6 (R)	

	%	1-6		Structural
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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TANK AND VOID ASSESSMENT SHEET

Structural Integrity Data							
Estimated Total Linear Feet of Structure Requiring Repair:			Estimated Total Square Feet of Plating Requiring Repair:				
Cracks/ Fractures Present:	◯ Yes	◯ No	Buckling/Deflections/ Distortions Present:	◯ Yes	◯ No		
Holes Present:	◯ Yes	◯ No	Material Wastage Present:	◯ Yes	◯ No		
All Welds Intact:	◯ Yes	◯ No	Structural Evaluation Recommended:	◯ Yes	◯ 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: Main Diesel Engine Assemblies, Perform W-5 Maintenance And Update Control System Configuration

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform a W-5 overhaul of the port and starboard main diesel engines (MDEs) and to update the control system configuration.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
Y	Cylinder Head	NSN: 2815-12-345-1076	16 ea.	3274.71
Y	"A" Bank Turbocharger	NSN: 2950-12-347-2009	2 ea.	12,642.58
Y	"B" Bank Turbocharger	NSN: 2950-12-347-2010	2 ea.	11,050.16
Y	Sea Water Pump	NSN: 2930-12-344-4810	2 ea.	15,086.29
Y	Jacket Water Pump	NSN: 2930-12-344-4606	2 ea.	3799.67
Y	Starter	NSN: 2920-12-156-2556	2 ea.	3255.35
Y	**Charge Air Cooler	NSN: 2930-12-354-2436	2 ea.	32,974.85
Y	**Injector with retainer	NSN: 2910-12-341-9988	16 ea.	706.45
N	**Cylinder Liner	NSN: 2815-12-315-7282	16 ea.	1103.14
N	**Piston	NSN: 2815-12-362-8999	16 ea.	3816.34
N	Engine Acceptance Test Record	N/A	1/MDE	N/A

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

2. REFERENCES

COAST GUARD DRAWINGS

None

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 4573, Coolant Heating System, 17 March 2003

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

OTHER REFERENCES

MTU 8V 396 TE.4 Maintenance Manual M020046/21E

MTU 8V 396 TE94 Description and Operation Manual M011511/00E

MTU 8V 396 TE94 Parts Catalog M033971/00DE, Order #771903

MTU 8V396 TE.4 Tolerances & Wear Limits List M070026/00E

MTU Tool List M004021/20DE

MTU Exhaust Turbocharger ZR140 M040052/10E

MTU Solenoid Actuator, Description, Assembly Instructions M040082/10E

MTU Service Information 396-99/0562B Electric Governor Actuator with Oil Drain

MTU Fluids and Lubricants Specification A001061/35E

MTU Engine Management System Typ ECS 396/S Version E & F with ETB 4E/ETB 4F Document numbers; E 531 406/01 E, E 531 405/ 01E & E 531 403/02E

MTU Customer Connecting System CCS for ECS 396, E 531 416/00E

MTU Customer Connecting System CCS for ECS 396, E 531 415/00EMTU Electrical Start Device SUE-ES for ECS 396, E 531 482/00E

MTU Engine Control System Illustrated Parts Catalog E 535 145/01ED

MTU Junction Box CCS-ECS 396E Illustrated Parts Catalog E 535 151/01ED

MTU Local Operating Panel for ECS E 531 301/01E

MTU Local Operating Panel LOP-ECS Illustrated Parts Catalog E 535 297/02ED

MTU Electrical Start Equipment SUE-ES Illustrated Parts Catalog E 535 187/00ED

MTU Monitoring & Control Unit Documentation E 535 164/00ED

Installation of MTU Electronic Systems E 530 606/06E

ANSI/NCSL Z540 3 2006.08.03, Requirements for the Calibration of Measuring and Test Equipment

ANSI/ASQC Q90003-1994, dated 18 July 94, Inspection System

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep. The Contractor must provide the services of a Qualified Technical Representative who is familiar with overhauling and commissioning MTU marine engines, 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). Known interferences include, but are not limited to the following:

- Piping
- Valves
- Electrical Wiring
- Insulation

3.1.5 Labor. Provide all necessary labor to perform disassembly, reassembly, and any other required repairs associated with this contract.

3.1.6 Reports. All reports must be forwarded to the Contracting Officer, Port Engineer (COR), MTU Equipment Specialist in AMS1 and copied to 87 PDM Section Chief.

3.2 Maintenance, overhaul and repair work. The Contractor must perform the following on each:

3.2.1 Engine condition pre-check. Perform engine condition check prior to W-5 Maintenance in accordance with M020046/21E Section 2.1. This check shall require the cutter to get underway in order to run the engines at the maximum possible power.

3.2.2 W5 Maintenance. Perform an in-place MTU 8V396TE94 Maintenance Operation W-5 in accordance with the references listed beneath Section 2 above. Remove and properly dispose of all fluids in accordance with technical publications in conformance with local and federal laws. Furnish and fill all engine systems with the appropriate fluids in accordance with the technical publications. Submit Condition Found Reports (CFRs) for all inspections.

NOTE

All necessary fluids, such as oils, coolants and inhibitors, will be supplied and disposed of by the contractor.

3.2.3 Non-Government-furnished part and component renewal. Renew all gaskets, seals, and o-rings disturbed during the performance of disassembly and reassembly. Renew all other components required by the MTU 8V396TE94 Maintenance Operation W5. Furnish all required components not identified as Government-furnished Property (GFP). The contractor must use only MTU certified components; the use of aftermarket non-certified components is not permitted. Renew all removed fluids (e.g. lube oil, engine coolant, etc.) fluids shall be MTU certified and in accordance with section 2 references.

3.2.4 Government-furnished part and component renewal. Renew the following components using Government-furnished property.

- “A” Bank Turbocharger
- “B” Bank Turbocharger
- Cylinder Heads
- Jacket Water Pump
- Sea Water Pump
- Starter Motor

3.2.5 Clean and inspect components. Remove, clean, inspect, and reinstall the following components. Submit CFR for all inspections.

- Sequential Turbo Charging Actuator
- Sequential Turbo Charger Mechanism
- Lube Oil Cooler
- Plate Cooler
- Charge Air Manifold
- Fuel Injectors
- Charge Air Cooler (must be cleaned ultrasonically)
- Exhaust sleeves

3.2.5.1 Inspect the cylinder liners in place, without removal. Record dimensions on the "Data Sheet Cylinder Liner (installed)". Submit CFR if cylinder liners are found out of tolerance. Renew components using Government-furnished property if a Change Request is released by the Contracting Officer.

3.2.5.2 If during the course of conducting the W5 maintenance the contractor discovers any damaged parts or parts worn beyond specification, the contractor must submit a Condition Found Report (CFR) to the Contracting Officer, COR, & MTU Equipment Specialist in AMS1 for review and approval. The CFR must include any applicable MTU Data Sheets that documents the damage or out of tolerance condition and the price of any parts that cannot be furnished by the Government as well as the estimated labor cost to correct the discrepancy.

3.2.6. Configuration update. The Contractor must validate and update, as needed, the system parameters to match the current 87' WPB configuration.

3.3 Quality assurance. The Contractor must maintain an inspection system which must ensure each item offered to the Government for acceptance conforms to contract requirements. The system must be documented and in compliance with ANSI/ASQS Q90003.

3.3.1 Records. The Contractor must maintain records of all inspections and tests. The records must indicate the nature and number of observations made, type of deficiencies found and the corrective action taken. Records must be furnished upon arrival of the Coast Guard Representative.

3.3.2 Contractors calibration system. The Contractor, as well as any Subcontractors, must be required to maintain a calibration and maintenance system to control the accuracy of measurement and test equipment used in the fulfillment of this contract in accordance with ANSI/NCSL Z540-3. The system must include as a minimum, prescribed calibration intervals, source of calibration, and a monitoring system to ensure adherence to calibration schedules. Calibration standards must be traceable to the National Institute of Standards and Technology (NIST). Documentation in support of this requirement must be readily available for Government review.

3.3.3 Responsibility For inspection. The Contractor must be responsible for all inspections/test requirements specified herein. The Contractor must provide space, personnel, and test equipment to conduct all inspection requirements. Testing and inspection must be at the Cutter's location or other facilities acceptable to the Government. The Government reserves the right to verify or have performed any of the inspection/tests set forth in this specification where such inspections are deemed necessary to ensure that supplies or services conform to the prescribed requirements.

3.3.4 Reports. The Contractor must complete & submit the following data sheets & reports: Cylinder Liner (installed), Valve & Injection Timing, Piston Crown Clearance Adjustment (if any pistons & liners are replaced), and Sea Trial Test results. All reports must be forwarded to the Contracting Officer, Port Engineer (COR), MTU Equipment Specialist in AMS1, and copied to 87 PDM Section Chief.

3.4 Dock and sea trials. Under the supervision of the COR, the Contractor must commission the engine and conduct dock and sea trials utilizing the Diagnostic System (DIASYS) and the original Engine Acceptance Test Record Data to ensure proper operation of the marine propulsion diesel engines in accordance with MTU 8V396 TE.4 Workshop Manual M020046/21E Section 2 & SFLC Std Spec 0000. The contractor must demonstrate for the CG Inspector or COR that all engine parameters are within the correct range, and the engine is operating properly. Submit CFR detailing all sea trial test results.

4. NOTES

4.1 Equipment operation. Coast Guard personnel will operate all shipboard machinery and equipment during all tests.